STEWART CARSON.

THE

RETROSPECT

OF

PRACTICAL MEDICINE AND SURGERY,

BEING A

HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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PRACTICAL MEDICINE,

&c. &c.

Art. 1.—ON THE SOUNDS OF THE HEART.

By Dr. Watson, Lect. on the Practice of Med., King's Col., London.

[We are persuaded that one reason why the physical signs of disease of the heart and lungs are so little studied by the medical practitioner, and especially by him whose ambition or pleasure in the science does not stimulate him to aim at a high standing in his profession, is the apparent complexity of the study; whereas were he in the first place to make himself master of the simple laws of sound, he would easily understand most of the sounds which arise from diseases of the heart and lungs. We are particularly pleased with Dr. Watson's lectures, as he endeavours to simplify the study of these diseases, so that the youngest or most careless practitioner may easily understand them.

Before giving our readers his simple and beautiful explanation of some of the sounds of the heart, it will be necessary to premise a few observations. In studying the diseases of the heart, we must neglect neither the *general* nor the *physical* symptoms, as the one will frequently enlighten us respecting the other. It is especially necessary for us to understand the healthy sounds of the heart before we can understand those which are morbid. It is generally known that the heart in its healthy condition ought only to be heard in the chest within a certain space, "that space in ordinary circumstances corresponds to the inferior half of the sternum, and to the cartilages of from the fourth to the seventh ribs on the left side. On the other hand, if the heart be larger than natural it will be heard over a larger space, frequently over the whole chest in front, and behind on the left side, and in extreme cases on the right

side of the spine." "Again, the extent of the space over which the heart may be heard to beat, will be increased in proportion to the *thinness* of its walls, and diminished, *cæteris paribus*, according to the thickness of its walls. So that when the heart is of its proper size, if its walls be thin, it will be heard beyond its natural limits; and if its walls be morbidly thick, i. e., if it be affected with considerable hypertrophy, it will not be heard beyond nor even to the extent of its natural limits." "Again, the heart may be heard far beyond its natural limits, even when perfectly healthy, in consequence of the lung between the ear and the heart having become solid, and therefore a better conductor of sound; and the solidification may have resulted from hepatization, or from the presence of a number of crude tubercles." Liquid effusion will also produce the same effect. At the same time we must bear in mind the observations on this subject of Dr. Skoda, of Vienna, who denies the correctness of the common opinion that sound is propagated with increased intensity through lungs whose tubes as well as general structure have been solidified.* Again, the *impulse* of the heart must ever be borne in mind when we are examining this organ.]

In healthy persons who are thin, you may generally feel the stroke which the heart gives to the ribs, by placing your hand on the præcordial region. In persons who are fat, you often cannot feel the heart beat at all in this manner. For obvious reasons, it is felt more distinctly over a larger space and higher up, while the person is stooping forwards, or makes a forced expiration; less distinctly, over a smaller space, and lower down, when he makes a deep inspiration, or is lying on his back. In proportion as the heart is enlarged by disease, it can be felt more extensively: and when there is hypertrophy, the force with which it strikes the parietes of the chest is sometimes extraordinary, and very instructive. You will see the ear and head of the listener distinctly lifted at every pulsation; sometimes the whole of the patient's body, and his very bed, is shaken by the strong shock of the heart during its systole. There is no sign of hypertrophy so sure as that afforded by the heart's impulse. You feel, not a smart, quick, and sudden knock, but a steady heaving irrepressible swell, which is perfectly

* See Retrospect of Medicine, No. IV., Art. 1.

characteristic. You may always infer increased thickness of the walls of the organ, when you meet with this regular heaving motion; and the extent to which the whole heart is enlarged in such cases may be discovered by the extent of space over which the heaving impulse is perceptible.

The *sounds* which we hear are two. One of them coincides, in point of time, with the impulse; and barely precedes the beat of the radial artery. It happens, therefore, when the ventricles contract; during the systole. It is accordingly called the *first* sound of the heart, or the *systolic* sound. The other of the two sounds coincides with the diastole, and is spoken of as the *diastolic* or *second* sound. It takes place at the instant when the heart reverts to that place and condition in which it had been prior to the systolic movement. These two sounds occur in quick and regular succession, and then follows an interval of silence, after which the two sounds are repeated; and so on.

The two sounds are not, however, exactly alike. They differ somewhat, both in quality, and duration. The first is a dull, prolonged noise; the second a shorter and smarter sound, having more of a clacking or flapping character.

Respecting the physical *causes* of these natural sounds there have been much recent discussion and research. Our time, however, will permit me to do little more than tell you what I believe to be the facts of the matter. And I take, first, the diastolic sound, as being the simpler of the two. It used to be ascribed to the contraction of the auricles: but that was quite a mistake. The contraction of the auricles, such as it is, happens immediately *before* the systole of the ventricles; whereas the sound in question occurs immediately *after* it. This we know from the visible movements of the organ when exposed in a living animal. In truth, the auricular contractions are very feeble, and not attended with any appreciable noise. I have no doubt that the second sound is produced mainly, if not altogether, by the sudden shutting of the flood-gates placed at the mouths of the two great outlets of the heart. The recoiling blood forces back the semilunar valves of the aorta and of the pulmonary artery, as one unfurls an umbrella; and with an audible check as they tighten. There is no other tenable mode of accounting for the sound. Experimenters have contrived, by hooks and wires, to prevent these valves from unfolding; and then the flapping

sound has been converted into a hiss. Disease of the same valves demonstrates the same things; as we shall presently see. Nevertheless, it is both possible and probable that the relapse of the whole organ to its former place may contribute an ingredient towards this second sound.

The first, or systolic sound, is more complex. Partly it is owing, as I believe, to a similar cause with that which occasions the diastolic sound, viz. the abrupt closure of the orifices of communication between the auricles and ventricles, by the reflux of the blood against the ventricular surfaces of the tricuspid and mitral valves; partly, sometimes, to the blow of the heart's apex against the ribs; *chiefly,* however, it consists of the sound that results from the muscular contraction of the ventricles. The systolic sound commences with the tightening of the walls of the ventricles, including the valves; and it is prolonged by the muscular noise. You are aware, I dare say, that the vigorous contraction of a large muscle is accompanied by audible sound. If, during the stillness of night, when lying in bed, with your cheek and ear upon the pillow, you set your teeth firmly, you will hear a continuous dull rumbling, caused evidently by the action of the masseter and the temporal muscles. Dr. Williams states that, with the help of a flexible stethoscope, one may hear the voluntary jerking contraction of his own abdominal muscles; the sound being as loud as that of the heart's systole, and very like it in character. That the systolic sound is essentially due to muscular contraction is proved by the fact, that when a heart is taken from the living thorax and placed upon a table, its contractions (which persist for a while) are still attended with a noise similar to the natural first sound, though weaker. Here there is neither collision of the blood, nor valvular re-action, nor impulse against the ribs, to render the experiment ambiguous.

If you acknowledge and comprehend this source of sound, you will understand without difficulty why the heart, *cæteris paribus,* is heard more clearly and extensively when its walls are thin, less widely and loudly when they are thick. "The transition (says Dr. Williams) of a thick muscle from slack to tight can never be so complete and sudden as that of a thin one. Where there are many fibres they choke and muffle each other's vibrations; hence the sound is dull and prolonged, rather than loud and clear. If we observe the different sounds

produced on tightening thin silk and thick baize or cloth, we find that the thinness of the silk gives a unity and briefness to the impulse which it receives, and the sound is short and loud; whilst in the baize the impulse is divided and prolonged in the complexity of the fibres, and the sound is dull and less brief: so, under similar circumstances, a thin ventricle will give a louder, sharper sound than a thick one."

The natural sounds which I have been describing are liable to be changed, or modified, by disease. Some of the modifications, indeed, I have adverted to as I went along. But others, of a more striking and extraordinary character, are yet to be explained. Either sound, or both, may be accompanied by a noise, which, in its commonest type, very closely resembles that produced by the blowing of a pair of bellows. Four persons out of five, I should think, if asked what this sound resembled, when they heard it accompanying each systolic movement of the heart, would say that it was exactly like the repeated blowing of bellows in an adjoining room. It is called accordingly, by the French, the "*bruit de soufflet*"; and, in homely English, a *bellows sound*. This is the generic sound. It may be divided into species; but it is scarcely worth while so to divide it. We are only likely to confuse our notions by over-refinement. So I will only add, that, when this bellows sound is very harsh or rough, persons will tell you that it is more like the noise of a rasp, or a file, or a saw: but all the while it is some kind of bellows sound. These sounds are often denominated *murmurs* also.

Now what is the cause of this singular deviation from the natural noises made by the successive contractions and relaxations of this hollow muscle, the heart? Why, I believe, the whole matter may thus be briefly expressed. The blowing sound may be occasioned by any change which alters the due proportion between the chambers of the heart, and their orifices of communication with each other, and with the blood-vessels that respectively enter or leave them; it may also be occasioned by a preternatural velocity in the passage of the blood through a healthy and well adjusted heart. Dr. Elliotson, I think it is, who has offered this apposite illustration of the phenomenon. If the arches of a bridge have a certain relation to the quantity of water in the river, and to the force of the current, the water passes through them quietly, and without any noise. But if

you diminish the size of the arches, the water will begin to go through them with an audible rushing or roaring sound; and the very same thing will happen if the arches remain unchanged in size, but the quantity of water in the river, and therefore its velocity and force, be augmented by heavy rains. So it is in the heart. If one of its orifices—say the aortic orifice—be narrowed, by disease of the valves, or in any other way, the blood will not, as before, glide through it smoothly and without noise, but will yield that sound which we call a bellows sound. So, also, if the orifice retain its natural dimensions, but the capacity of the cavity from which the blood is driven be augmented. Nay, the same blowing sound may be produced though the cavities and orifices be all healthly, and duly proportioned to each other, if the velocity of the circulating blood be increased beyond a certain measure. If you bear this explanation in mind, it will be found applicable, I think, to almost every case in which there is a blowing sound accompanying the *systole* of the organ. If, at the same time, the valves over which the blood must pass be rigid, or rough, or even loose and vibrating, these circumstances may modify the blowing sound, and render it louder, or hoarser than it would otherwise be, and justify the appellations of *bruit de scie,* and *bruit de rape,* with which you will find the French books, and many of our English also, full.

But this explanation applies to a *systolic* blowing sound only. What are we to say when there is a similar sound attending the diastolic movement of the heart? Why a diastolic bellows sound will mostly, if not always, be found to accompany and denote some organic disease affecting the valves of the heart. Thus, if the mitral valve be converted, as it often is, from a loose flapping valve into a bony and rigid unvarying chink, the blood which passes through it from the auricle to the ventricle, during the diastole, may cause a rushing or blowing sound. On the other hand, the reflux of blood through the unshut mitral orifice, during the ventricular contraction, may also be attended (though it seldom is) with an audible noise; and thus we have another source of a *systolic* murmur. Again, if the aortic valves are imperfect, as they often are, and do not effectually close that vessel, blood will regurgitate through them during the diastole, and produce a bellows sound. That this is the true explanation of the diastolic

murmurs, I am convinced, both by the observation of disease, and by the results of experiments on animals. In some of Dr. Hope's experiments, which he was good enough to allow me to witness, the short clack of the diastole was at first distinctly audible; then hooks were introduced, so as to prevent the perfect closure of the sigmoid valves during the diastole, and then the short smart clack was converted into a prolonged bellows murmur; and, upon letting them go again, the short smart clack recurred. And I have repeatedly predicted, and found such disease of the sigmoid valves as prevented their proper function—that of shutting out the blood in the aorta from re-entering the ventricle—I have repeatedly predicted that morbid condition when I met with a certain kind of diastolic bellows sound during life, and have found it, and justified the prediction, after death.

[In another lecture, Dr. Watson makes some valuable observations on valvular disease, which we cannot help transcribing. It being ascertained by the *bellows* sound that valvular disease exists *somewhere,* can we fix on the particular valve implicated? This may often be done.]

When a bellows-sound accompanies the systole, it must be caused by a current passing *out* of a ventricle. But serious disease of the valves, sufficient to occasion a murmur, on the right side of the heart, is very rare. In nineteen cases out of twenty valvular murmurs belong to the left side; so that practically the distinction lies, almost always, between two orifices, the mitral and aortic, the inlet and the outlet of the left ventricle. The natural inlet has become an outlet also: or the natural outlet obstructed. Now if the sound be heard at the base of the heart, and along the track of the thoracic aorta, up towards the right clavicle, and even in the carotids; and if it be less audible towards the apex, and if the pulse be steady and regular, the mischief is seated in the semilunar *valves of the aorta:* there is some obstacle which produces a ripple in the onward stream of the blood.

On the other hand, if the pulse be irregular, and if the sound is heard better towards the apex of the organ, on the left, it is owing to regurgitation through a diseased *mitral* valve. Such regurgitation is often attended with a purring thrill.

When, what scarcely ever happens, the sound does result from injury of the semilunar valves of the pulmonary artery, it is heard plainest in the track of that vessel, up towards the *left* clavicle. So, also, a murmur produced by change in the tricuspid valve would be loudest towards the apex, on the right. The arterial pulse, for obvious reasons, is but little influenced by disease affecting the orifices of the right heart.

Again, if the morbid sound be diastolic, it accompanies the entrance of blood *into* a ventricle; and for similar reasons as before, the fault is most probably in the *left* ventricle. It may be owing to the direct, but impeded passage of the blood from the left auricle through a narrowed mitral orifice: yet this *very* seldom occasions any audible noise. Or the diastolic murmur may proceed from regurgitation through the defective aortic valves: the natural outlet having become an inlet also: and this is exceedingly common. We attend, as before, to the situation and the track in which the sound is the loudest. We listen also for the smart clack of the natural second sound; and if it is not to be heard, or is very indistinct, we have, in that circumstance, corroborative evidence of an imperfect aortic flood-gate. Moreover, we are again assisted by the pulse. The pulse of aortic regurgitation is very striking and peculiar: sudden, like the blow of a hammer, without any prolonged swell of the artery. It always reminds me of the well-known chemical toy, formed by including a small quantity of liquid in a glass tube, exhausted of air, and hermetically sealed. On reversing the tube, the liquid falls from one end of it to the other with a hard short knock, as if it were a mass of lead. The sensation given to the finger by the pulse, when there is much regurgitation through the aortic valves, is very similar to this. It is as if successive balls of blood were suddenly shot along under the finger. Dr. Hope calls this pulse a *jerking* pulse; the pulse of unfilled arteries. And this abrupt pulse makes itself *visible* in the arteries; the wave of blood lifts, and moves, and sometimes contorts the vessel. When this kind of pulse occurs with a diastolic bellows-sound heard in the track of the aorta, and the short clack of the second sound is absent or diminished, you may be quite sure that the aortic orifice is patulous during the diastole. The reflux of the blood, when the patency is great, is strong enough sometimes to produce a palpable shock or jog, called the diastolic

impulse. And this refilling of the ventricle from the artery may even provoke it to a supernumerary contraction.

Dr. Watson's Lectures.—*Medical Gazette, Jan. 7, and* 21, 1842, *p.* 564, 646.

2.—MEDICINAL PROPERTIES OF LEONTODON TARAXACUM.

By Joseph Houlton, Esq., F.L.S., &c.

[A very excellent paper on this plant was published in 1828, in the Medical and Surgical Journal, which we are glad to see once more before the public; as it is very probable that the different opinions respecting this useful plant are owing both to the improper mode in which it is prepared, and the indiscriminate way in which it is used. Mr. Houlton gives an account of the opinions of different eminent practitioners on the use of this medicine. Bergius considered it as aperient and diuretic, and useful in obstructions of the liver, &c. "The late Dr. Pemberton used it in chronic inflammation and incipient scirrhus of the liver, and in chronic derangement of the stomach, with great success." Dr. Wilson Philip says, "For the purpose of lessening the quantity of mercury, I have also combined with it such other means as tend to promote a regular and healthy secretion of bile. Of all the means which I have employed with this view, I have found none equal to dandelion." In his treatise on indigestion, he states, that "nitro-muriatic acid and the dandelion appear to be the best substitutes for mercury;* and that the dandelion appears to possess greater powers in this disease than are usually ascribed to it, but that it requires to be taken in very large doses. It is best adapted to those cases in which the bile is deficient or much disordered, while the power of the stomach is still considerable. In such cases, I have seen the patient restored by a strong decoction of dandelion, used for common drink, without the aid of other medicine. In addition to its effect on the liver, it tends to cool and consequently to allay the inflammatory diathesis, and often it excites both the bowels and the kidneys." There is very little correct information given respecting the time of gathering the root, either by the college or Dr. Paris in his

* See an interesting article on the nitro-muriatic mixture in Retrospect, No. I, Art. 34.

Pharmacology. Mr. Houlton proceeds to say:]

My own observations perfectly coincide with those of Bergius. In the month of March, the juice obtained from the bruised root by pressure, is a thin, watery, and brownish fluid, weak in flavour; whilst that procured by the same process towards the end of summer is thick, opake, and cream-coloured; and in a few minutes after being expressed, it sets to a much more solid consistence, becoming as thick as common paste; it is very bitter and saponaceous. This is the season in which I have chosen it for medical purposes, and from many years of observation upon this plant of disputed virtues, I have been led to a conviction that it has medicinal powers, varying essentially according to the time of the year in which it is gathered and the mode in which it is prepared.

The extractum taraxaci, as commonly sold in the shops, I believe, has but very little virtue. I have myself taken more than one ounce *per diem*, of a good looking article, without perceiving any sensible effect from it. If the juice be boiled, a very great change takes place in its sensible properties; it loses its bitter flavour, and forms a sweetish and ductile mass. The same is observed in an extract formed from an evaporated decoction, as ordered by the College. I cannot speak with much confidence of the virtues of the decoction of the roots. My observations on it have not led to a satisfactory result. It is, in fact, no easy task to determine with accuracy the medicinal powers of the less energetic agents in the materia medica.

The most uniform and active preparation of this plant, I believe, may be obtained, by carefully evaporating spontaneously the expressed juice of the roots taken up in August and September. The extract formed in this manner I have found to be a valuable medicine, both in my own person and in practice, and have the concurrent testimony of practitioners of different departments of the profession who have used it with success. A physician, who had been long resident in India, observed to me, after taking some of the extract prepared as above stated, "I have never before found any benefit from taraxacum." It is a tenacious, saponaceous mass, not ductile; it keeps remarkably well if evaporated sufficiently. It is a valuable anodyne, deobstruent, slightly aperient and diuretic. In

some cases of chronic diarrhœa it has soothed the bowels, and has given that relief which no other medicine was found to afford.

In cases of chronic disorder of the digestive organs, not produced by intemperance, its efficacy is frequently very decided. In visceral derangements from intemperance I have not found it of much service, but in females, and other persons of sober habits and of studious and sedentary pursuits, it has been very beneficial, increasing the flow of bile, and allaying that uneasiness which the dyspeptic frequently experience about the hepatic region. If practitioners would employ the taraxacum in the form here proposed, I feel confident that a proper estimate of its virtues would be ascertained, and that the opinions of the filii Apollinis would, respecting this medicine, cease to be discordant.

Pharmaceutical Transactions, No. 8, *p.* 422.

[Mr. Houlton was accustomed for some time previous to the writing of the above paper in 1828, to prepare his extracts of dandelion and hemlock by spontaneous evaporation, and he has specimens of these extracts prepared in 1829 which are still in excellent condition. "The power of a current of dry air in inspissating vegetable and other fluids exposed to its influence is very great."]

Those who may feel disposed to make an extensive trial of the plan, I would advise to appropriate a room to the purpose, at the upper part of the house; to have stands made with shelves one above another, on these to place plates or table dishes, and pour into them the juice, the less at a time the quicker will be the entire process; when one dish is finished it may be scraped out, or a fresh quantity of juice added. A small fire in the room will facilitate the process, and if the atmosphere is humid the fire is requisite, for the air must be dry in order to abstract the moisture of the juices. I believe the foregoing remarks are all that are required for the guidance of the practical pharmaceutist.

Ibid, No. 9, *p* 491.

ON TARAXACINE.

M. Polex, has extracted from the milky juice of the Leontodon Taraxacum, a crystallizable substance, which he has designated Taraxacine. The milky juice of the plant is boiled

in distilled water, by which means the albumen is coagulated, carrying with it the resin, the fatty matter, and caoutchouc. The concentrated liquor is filtered, and allowed to evaporate spontaneously in a warm place. The Taraxacine crystallizes during this operation, and should be afterwards purified by repeated crystallizations from alcohol or water. It forms arborescent or star-shaped crystals. These melt readily, are not volatile, and have a bitter and rather acrid taste. They are sparingly soluble in cold water, but dissolve abundantly in boiling water, in alcohol or ether. They dissolve in the concentrated acids without being decomposed. Taraxacine would be classed among the neutral vegetable principles, and it contains no azote.

When the albuminous precipitate which has been separated from the water is boiled in alcohol, a colourless substance, in the form of small cauliflower crystals is obtained on the evaporation of the alcohol. On being dried it falls into a powder, very fusible, but difficultly ignited. It is insoluble in water, but very soluble in alcohol and ether. The solution has an acid taste, and produces no precipitate with acetate of lead. It is insoluble in the caustic alkalies.—*Berzelius's Report on the Progress of Science.*

Ibid, No. 8, *p.* 425.

3.—ON PERCUSSION.

By John Hughes Bennett, M.D., Edin., Lecturer on Clinical Medicine.

[Mediate percussion as employed by M. Piorry, is undoubtedly a more valuable means of diagnosis than is generally allowed. His experience, it is said, enables him to "map out, as it were, on the surface of the skin, with ink, the size and form of the heart, arch of the aorta, liver, spleen, kidney, &c.; and indicate to the eighth of an inch, the exact height of pleuritic effusion, or the margin of circumscribed pneumonic dulness." At first sight this partakes too much of the marvellous, but when we know the length of time he takes to percuss a single patient, (half an hour,) we may suppose him to be a more expert operator than the generality of practitioners. The instruments he uses are, 1st. *The Hammer*: the head of which is made of steel, brass, or iron; a capsule is screwed to the end with a projecting disc of caoutchouc; the handle is

made of wood, with depressions for the fingers and thumb. The head of the handle is not placed exactly at right angles with the handle, but has a slight obliquity upwards. "This is necessary, because in employing it the handle is almost certain to be somewhat elevated, and this slight obliquity even then allows the practitioner to strike the pleximeter perpendicularly. 2nd. *The Pleximeter:* made of ivory, wood, or metal, with a handle at each extremity, to enable the practitioner to take hold of it more readily.]

General rules to be followed in the practice of Mediate Percussion.—1. The pleximeter should be held by the projecting handles between the thumb and index finger of the left hand, and pressed firmly down upon the organ to be percussed. Much depends upon this rule being followed, as the sound and sense of resistance are considerably modified according to the pressure made by the pleximeter. A very easy experiment will prove this. If, for instance, the pleximeter be struck while it rests lightly on the abdomen over the umbilicus, and again, when it is pressed firmly down amongst the viscera, the change in tone will be at once perceived. In the first case a sound is produced, from the muscles and integuments being alone influenced by the force of the blow; in the second case, a clear tympanitic sound is occasioned from the vibration of the walls of the intestine. In every instance, therefore, the pleximeter should be so held and pressed down, as to render it, so to speak, a part of the organ we wish to percuss.

2. Care must be taken to strike the pleximeter fairly and perpendicularly. Unless this be done, vibrations are communicated to textures in the neighbourhood of the organ to be percussed, and fallacious results are the consequence. If, in percussing the lungs, for example, the blow be made obliquely, we obtain the dull sound produced by the rib, and I have seen considerable error in the diagnosis thus occasioned.

3. A strong or gentle stroke with the hammer will modify the tone and sense of resistance, inasmuch as the impulse may be communicated by one or the other to a deep-seated or a superficial organ. Thus a gentle stroke will elicit a pulmonal tympanitic sound just below the fourth rib, where a thin layer of lung covers the liver, but a strong one will cause a jecorol parenchymatous sound. At the inferior margin of the liver, on the other hand, where a thin layer of the organ covers the

intestines, the reverse of this takes place, a gentle stroke occasioning a dull, and a strong one a clear sound.

4. By withdrawing the hammer immediately after the blow, we are better able to judge of the sound; by allowing it to remain a moment, we can judge better of the sense of resistance.

5. The integuments should not be stretched over the part percussed, as when the stethoscope is employed, for an unnatural degree of resistance is thus communicated to the hand of the operator from the muscular tension. In every case, especially where the abdomen is examined, the integuments and superficial muscles should be rendered as flaccid as possible.

6. It is always best to percuss on the naked skin. It is not absolutely essential, however, and in cases where, from motives of delicacy, it is desirable that the chest or abdomen be not exposed, it only becomes necessary that the covering of linen or flannel be of equal thickness throughout, and not thrown into folds.

Special rules to be followed in percussing the chest.—Percussion of the lungs generally bears reference to a change in density, which is only to be detected by comparing the healthy with the morbid portions. The great practical rule here to be followed, is to apply the plexiметer to both sides of the chest in succession, with the same firmness, exactly in the same situation, and let the blow with the hammer be given with the same force. Care must be taken that the position of both arms be alike, as the contraction of the pectoral muscles on one side more than on the other may induce error. In short, every circumstance must be the same before it is possible to determine in delicate cases, either from the tone or sense of resistance, whether change of density exist in the lungs. When circumscribed alterations are discovered in the pulmonary tissue, their limits may be marked out on the surface of the skin, in the manner previously indicated. In this way, I have frequently succeeded in determining with accuracy the size and form of circumscribed indurations, arising from partial pneumonia and pulmonary apoplexy. Under the clavicles, the plexiметer must be applied with great firmness. Inferiorly, a thin layer of lung lies over the superior surface of the liver; and to determine the exact place where its inferior border terminates, the blows with the hammer should be very slight. Posteriorly, also, the plexiметer must be firmly applied, and

the force of the blows considerable: but they should decrease in force inferiorly, where a thin layer of lung descends over the liver much deeper than anteriorly.

In a healthy state, a distinct difference may be observed in the sonoriety of the lungs immediately after a full expiration and a full inspiration. This does not take place when the tissue becomes indurated from any cause; and thus we are furnished with a valuable diagnostic sign. Congestion of the lung, and pneumonia in its first stage, causes only slight dullness and increased resistance, which, however, are readily detected by the practised percussor. In the second and third stage of pneumonia, and in apoplexy of the lung, this dullness and resistance are well marked, and even an impression of hardness and solidity communicated to the hand. When, however, the lung is studded with tubercles, the induration is most intense, and the greatest degree of resistance communicated.

Partial indurations from pneumonia, apoplexy, or tubercular deposition, may be detected by percussion, even when deep-seated and covered by healthy portions of the lungs. In this case, by pressing with the plexímeter, and striking lightly, a tympanitic sound only is heard; but by pressing the plexímeter down firmly, and striking with force, the dull sound may be elicited and circumscribed. When induration, however, exists inferiorly in those portions of the lungs which overlap the liver, it requires great practice to detect them with certainty. Caverns in the lungs, when large and filled with air, induce a tympanitic sound; but they are generally more or less full of viscous and fluid matters, and give rise to dullness.

Two or three ounces of fluid may be detected in the pleural cavity, by causing the patient to sit up. It is readily distinguished posteriorly, from the dullness of the liver on the right side; on the left, however, the limit between it and the spleen is not so well marked. The height or level of the fluid is readily determined, and should be marked daily by a line made with nitrate of silver. If the effusion be only on one side, the peculiar humoral dullness is more easily detected. It disappears on placing the patient in such a position as will cause the fluid to accumulate in another part of the pleural cavity, when the space, which was previously dull, becomes clear. When the effusion entirely fills the pleural cavity, no limit of course can be detected; but, even then, the dullness

is distinguished from that of the liver by the diminished feeling of resistance.

When air is effused into the pleura, the sound is like that of a drum, and readily detected.

Lond. and Edin. Monthly Journal of Med. Science, Feb. 1842, *p.* 133.

4.—ON ASTHMA.

By Dr. Watson, Lecturer on the Practice of Medicine, King's College, London.

[Almost every practitioner must have witnessed an attack of Asthma. The symptoms are so well known that we need not here particularly relate them. The paroxysms will often occur for many nights in succession, and will then gradually subside. The strong desire for fresh air, and the impunity with which the patient will frequently rush to the open window, is a strong proof that it is the nervous system which is principally affected in these cases. It may be looked upon as essentially a spasmodic affection. The co-existence of spasm in other parts of the body, as in the muscles of the calves of the legs, &c. is another proof of the spasmodic nature of the affection. "Again, the rapidity with which the dyspnœa comes on, and the suddenness with which it often abates, resemble the caprice of spasm. The enormous flatulence, and the secretion of hysterical urine, mark also the nervous character of the symptoms." Moreover morbid appearances after death are often imperceptible. We may therefore conclude that the phenomena attending a fit of asthma are often the result of pure spasm.]

But, [says Dr. Watson,] if this be so, what are the muscles thus fixed in spasmodic contraction?

You are doubtless aware that the air-tubes are encircled with a series of little fibres, or bundles of fibres. I have more than once shewn you these, exaggerated by hypertrophy, in the larger bronchi. They have been traced by Reissessen, in tubes of a very small diameter. Laënnec states, that he had distinguished them in bronchial ramifications, less than one line across. Now, supposing these circular fibres to be muscular, it becomes at once, and *à priori*, likely that they, no less than other muscles, should be liable to spasm. And the phenomena of asthma prove, to my mind, that they are so. I give you my opinion that they are muscular; but I am bound to tell

you, at the same time, that better anatomists than I am dispute this point, or doubt it. Analogy would say that the fibres, thus disposed, are slender muscles, like those which surround the intestines and urinary bladder. The microscope, I am told, scrutinizing their minute texture and appearance, asserts that they are not. But a test, less fallible than the microscope, has practically settled the question, Dr. Williams has recently demonstrated, by a set of ingenious and satisfactory experiments, that the lungs and air tubes are actually *contractile* to a very considerable degree, under electrical, chemical, and mechanical stimuli. The contractions take place steadily and deliberately; and are followed, as soon as the stimulus is withdrawn, by an equally gradual relaxation. This is very like tonic spasm. The contractions were rendered apparent by means of a bent glass tube, containing coloured liquid, and adapted to the windpipe of an animal just deprived of life. The column of liquid in the glass tube would of course be readily moveable by any contraction of the lungs and air-tubes, causing pressure of the included air against it. In one of the experiments, "on passing a galvanic current from the margin of the lungs to the insertion of the tube in the trachea, the fluid rose quickly, but gradually, nearly two inches; sunk speedily on breaking the contact; again rose upon completing it; but fell slowly when the current was continued some seconds," *i. e.* when the irritability of the tissues was temporarily exhausted. Temporarily, I say, for on waiting two or three minutes between each application of the galvanism, the liquid was raised again and again for upwards of an hour; till, in fact, the organic life was extinct. Is not all this exceedingly like the behaviour of parts acknowledged to be muscular, under similar influences?

The phænomena were not occasioned by any general shrinking of all the pulmonary tissues. For when the lungs were cut across by sharp scissors, at right angles to the air tubes, and the open sections of these tubes were galvanized, they were *seen* to contract to one half of their former diameter; and even to become smaller than that. The contraction was the most distinct in the middle-sized tubes, being about the bigness of a straw: but it was sensible enough in the trachea, which was sometimes so far reduced in dimensions, that the ends of its cartilaginous rings came together.

A foreign experimenter, M. Valentin, carries us a step nearer to the full solution of this interesting question. He found that the rings of the trachea could be made visibly and distinctly to contract *by irritating the par vagum.*

Upon the whole, we may safely conclude that asthma is one of the spasmodic disorders of the excito-motory system of nerves. I believe, moreover, that, as in most other disorders of the same class, the spasm may be of centric, or of eccentric origin. In the eccentric form, the par vagum is doubtless the afferent nerve; and the impression it conveys to the medulla oblongata is reflected, through associated motor nerves, upon the bronchial muscles. The centric variety results from a similar impression originating in the nervous centres; which respond, mysteriously, to certain feelings of the mind.

[It has been stated by authors that in these cases no respiratory murmur, or very little, can be detected, and there is little doubt that notwithstanding the violent exertions of the patient to fill his chest, the expansion of the thorax is very limited. Laënnec affirms "that if a patient, after holding his breath nearly as long as he can, attempts a quiet and gentle inspiration, the spasm may often be overcome as if by surprise." This reminds us of the practice of Mr. G. Robinson, who has suggested a very simple and ingenious method of dilating the chest, in this and other spasmodic affections. He recommends that at the end of every inspiration, or during the expiration, the nostrils and mouth be kept forcibly closed for a very short time so as to prevent the act of expiration: the patient will thus be compelled to inspire for several times without expiring, and the consequence would be a forcible expansion of the thorax. We cannot speak from our own experience of the efficacy of this treatment, but we suspect the hint may be useful. (See Med. Gazette, March 25, 1842, p. 31.)

Genuine spasmodic asthma is probably seldom found uncomplicated with organic alterations within the thorax, such as emphyema of the lungs, structural changes in the heart and great blood vessels; and it is very probable that "the first step towards the production of the spasm, consists in some altered condition of the *circulation* through the lungs. The chilliness of the surface, and the sensation of the want of air, make it likely that the blood accumulates in the lungs at those times;

that there is congestion of the membrane as well as spasm of the circular fibres: and it would seem that in the humoral asthma, the congestion is relieved by a copious secretion of mucus; and that with the congestion, the spasm also subsides and disappears."

It is very remarkable what caprice is manifested by patients subject to this affection with respect to the localities which suit them. Speaking on this subject, Dr. Watson relates some remarkable facts which no doubt many other practitioners are acquainted with. He says:]

Another college acquaintance of mine, much tormented by asthma, is equally sensible to these inscrutable influences. Two inns in Cambridge are named respectively the Red Lion, and the Eagle. He can sleep in one of them, and not in the other. Nay he is thus variously affected within much narrower limits. He assures me that, when in Paris, he never escapes a fit of asthma if he attempts to sleep in the back part of Meurice's Hotel, and never suffers if he sleeps in a front room. Dover Street suits him; Clarges Street does not. He cannot rest in Manchester Square. This he attributes to its being built upon piles. Whether it really has such a foundation I do not know. And agencies still more slight and subtle are enough to set the springs of these seizures in motion. The mere absence of light, for instance. Laënnec speaks of a man who invariably was roused from his sleep by a paroxysm of asthma, if his lamp was extinguished; or if his chamber door was shut. The consciousness that the customary preventive remedy was not at hand, has, apparently, brought on a fit.

The dyspnœa may frequently be moderated or altogether assuaged by some form of narcotic. Now opium is the narcotic to which we most trust for the mitigation of spasm in general: and opium *is* of vast service in paroxysms of asthma. But there is also another of the vegetable narcotic substances which has obtained an especial repute for its effect in quieting the difficult breathing in these cases; and that is *stramonium.* This herb, the Datura stramonium, and other species of the same genus, the Datura ferox, had long been employed in India as a remedy for asthma. And when it was introduced into this country, about the beginning of the present century, it was cried up as a specific; and every body who called himself asthmatic began to smoke stramonium: for that is the way in

which it has been chiefly employed. The leaves and stalks are cut and put into a pipe, and smoked like tobacco. The smoke descends, of course, into the lungs: and when the saliva is swallowed, the remedy is introduced into the system in that way also.

Stramonium thus used, sometimes fails altogether: sometimes calms the paroxysm like a charm. The late Dr. Babington told me of a patient of his who had been grievously harassed for a series of years, by asthma, but who declared to him, after he had made a fair trial of stramonium, that he no longer "cared a fig" for his asthma; which he could always stop in a moment. So a Mr. Sills, in a collection of communications relative to the Datura stramonium, published in London in 1811, states, that he had been a great sufferer from asthma: that the fits usually continued, with short interruptions, from thirty-six hours to three days and nights successively: during which time, he had often, in the seeming agonies of death, given himself over, and even wished for that termination of his miseries. But having at length discovered the virtues of stramonium, he uses this strong language:—"In truth, the asthma is destroyed. I never experienced any ill effects whatever from the use of the remedy, and I would rather be without life than without stamonium."

I have found a mixture of opium and sulphuric ether of great service in tranquillizing the breathing in asthma. And in one case, which was under my care for some time, I made comparative observations respecting opium and stramonium. Both gave much relief; but stramonium the most, and the most certainly, *if it were applied in time.* This patient was in the habit of being roused from his sleep by the supervention of the paroxysm: and if he had the means of lighting his pipe *instantly,* he could stave the fit off. But when once it had attained its full intensity, he was *unable* to smoke. Under such circumstances, he would swallow the morphia and ether; and the effect of this depended also in a great measure upon the period at which it was taken. It would stop a commencing paroxysm; but had little influence over one that was fully formed.

It has been suggested, as one clue towards determining the particular kind of case to which the stramonium is applicable, that it succeeds if it produces *expectoration;* and not other-

wise. But I doubt about this. The relief is sometimes too sudden to admit of its being so explained. Dr. Forbes quotes the following passage of a letter from an old and intelligent asthmatic to himself. "Smoking tobacco or stramonium is sure to give relief, if it produces expectoration; and it will generally do so if, the moment I awake (*i. e.* in the incipient paroxysm), I begin to smoke, and continue to do so for three or four hours. Smoking, I am able to say, after fifteen years' practice, and suffering as much as mortal can suffer and not die, is the best remedy for asthma *if it can be relieved by expectoration.* I have been in the hands of all the doctors of the place for 15 years; and still I say *smoke.*"

The lobelia inflata has of late been much lauded for its beneficial operation upon dyspnœa of all kinds, and upon asthma in particular.

Dr. Watson's Lectures.—*Medical Gazette, Feb.* 11, 1842, *p.* 770—774.

[With respect to Lobelia, we do think that Dr. Watson has under-rated its powers. If expectoration has the effect of thus relieving a fit of asthma, we are convinced there are few if any expectorants to equal the lobelia inflata, when given in sufficiently large doses, and which after long experience we never once found to be dangerous in its effects. We have mentioned in a former volume our formula, and will here repeat it.—Take 3 ounces of the lobelia inflata, and macerate it for 14 days in 3 pints of proof spirit. We give from 15 minims to half a drachm to an adult, and about 10 drops to an infant of a year old, every few hours; and if no sickness is produced, the dose may even be gradually increased. In the latter stages of Bronchitis especially, the combination of a few grains of carbonate of ammonia with each dose will be a valuable addition.]

5.—ON THE PREPARATIONS OF ANTIMONY.

By William Tyson, Esq., Ashbourn, Derbyshire.

[The following practical remarks are made in a communication to the Pharmaceutical Society, on some of the preparations of antimony. It seems to be the general impression among medical men that most of these preparations are inert and nearly useless; and owing to the expense of Dr. James's fever

powder, that preparation is seldom used. Mr. Tyson makes the following observations on this subject.]

After torturing antimony in all ways, and trying in the course of my practice all its forms, in all doses, in all febrile diseases, in patients of all ages and of all temperaments, I became satisfied that we had only two preparations worthy of notice, and that these two were invaluable, viz., the tartrate and protoxide; and that the protoxide was the base of every useful preparation of antimony: proving the truth of the remark in Duncan's Edinburgh Dispensatory, that "oxide of antimony, with phosphate of lime, is one of the best antimonials we possess."

In comparing the effects of James's Powder with Pulvis Antimonialis, I sometimes found their virtues so alike in all their combinations as not to be distinguished. Sometimes I had occasion to prefer James's Powder to the Pulvis Antimonialis; at other times I had reason to give the Pulvis Antimonialis the preference, finding that in the James's Powder there was considerable variation.

Profiting by the idea set forth by Chenevix, I began with his preparation, which I soon found would not do; for I never was certain of the quantity of antimony. I then tried the oxide procured from emetic tartar; and, mixing it with phosphate of lime, I found I had a very useful antimonial, but it did not quite answer my expectation. At length I made my experiments on the pulvis algarothi, as ordered by Duncan; and upon adding to it, while in a state of hydrate (that is, after the supernatant liquor had been poured off), a solution of carbonate of ammonia, I was surprised to find a considerable effervescence, showing me that the beautiful white pulvis algarothi still contained a quantity of muriatic acid. I therefore continued to add solution of carbonate of ammonia, as long as any effervescence continued, and thereby deposited a straw-coloured protoxide, which I washed with distilled water upon a filter, and carefully dried.

The next thing I had to do, was to ascertain the effect of this; and I soon found that in this straw-coloured oxide I had a medicine of great power and efficacy, and that I could only give it in dose, from one-tenth of a grain to a grain; that a grain often vomits and purges; that half a grain combined with

five grains of calomel, given at the commencement of all febrile diseases, and followed by the neutral salts, cut short those diseases; that smaller doses, given every six hours, after proper evacuants, proved a mild but certain sudorific, without the nausea which emetic tartar produces; that when combined with small doses of calomel, it proved a powerful alterative. Comparing these effects with the best samples of James's Powder, I found it easy to form a compound similar thereto; and by experience I found I had obtained a preparation far superior, as being always the same and always certain. The following No. 1. and No. 2, are the forms in which I use it:

PULVIS ANTIMONIALIS.

No. 1. ℞ Protoxidi Antimonii, gr. ij.; Phosphatis Calcis, gr. xviij. Misce. Dose, from five to ten grains, if taken alone; but if combined with calomel, one grain to five grains.

Here we have a preparation totally soluble in dilute muriatic acid, ten grains containing one grain of protoxide of antimony.

No. 2. ℞ Protoxidi Antimonii, gr. ij.; Sulphatis Potassæ Phosphatis Calcis, aa. gr. ix. Misce. Dose the same.

Another form may be made in the same proportions, with calcined hartshorn shavings; but I prefer the above, as being entirely soluble in weak acids.

To the second form, you observe, I have added sulphas potassæ, for three simple reasons:

1st. Because, in the best analyses of James's Powder, sulphate of potass has been found; which probably arises from fusing together sulphuret of antimony and nitrate of potass.

2d. Because it is more economical, in saving my phosphate of lime, which being procured by solution, is troublesome to obtain, and expensive.

3d. The third reason is the most sound of all: it acts with more certainty, and gently, upon the secernments of the alimentary canal. The practitioner may use which form he pleases; but, after many years' experience, I prefer that with sulphas potassæ.

PROTOXYDUM ANTIMONII.

℞ Sulphureti Antimonii, ℥j.; Acidi Muriatici, ℥iv.; Acidi Nitrici, ℥ss. Misce.

Boil together for an hour, in a glass vessel; filter through paper; pour the filtered solution into water; pulvis algarothi,

i. e. submuriate of antimony, is precipitated; pour off the supernatant liquor, and add to this precipitate a solution of carbonate of ammonia, as long as any effervescence continues; wash upon a filter with distilled water, and dry by a gentle heat.

Here we have about five drachms of beautiful straw-coloured protoxide.

PHOSPHAS CALCIS.

℞ Cornu Usti (vel, Earth of bones), ℥iv.; Acidi Muriatici, ℥iv.; Aquæ Puræ, ℥x. Misce.

Let them stand together for several days, occasionally shaking the vessel; filter, and then add to the filtered liquor, Liquor Ammoniæ Puræ, ℥iv. vel. q. s. Wash upon a filter with distilled water, and dry.

When giving my Pulvis Antimonialis with calomel, every six hours, as an alterative, I have been occasionally obliged to reduce the dose to one grain of the compound, as mentioned before; for such is the deoxygenating power of this protoxide, and such is its affinity for acids, that when made into a pill with calomel, it decomposes the calomel, turns it black by taking up the muriatic acid, and will occasionally excite vomiting and diarrhœa. To obviate this inconvenience, I am now in the habit of giving it in combination with the blue pill. But my blue pill is not the blue pill of the Pharmacopœia, which, under the best management, is a very uncertain preparation. I make pilula hydrargyri with the protoxide, and to complete the usefulness of this communication, I will give you a form of that also.

PILULA HYDRARGYRI PROTOXYDI.

℞ Hydrargyri Protoxydi, ℥j.; Confectionis Rosæ Gallicæ, ℥iij.; Pulvis Florum Anthemidis, ℥ss. M. s. a. et fiat Massa.

Here we have a preparation with only half the quantity of mercury, far superior to, and of the same colour as the blue pill; always the same in effect, and always certain, and made in a few minutes. I have been obliged to leave out half the quantity of mercury, in order to approximate it to the strength of the blue pill of the Pharmacopœia, finding that the whole quantity was too active. I use the powdered chamomile, instead of the liquorice powder, as it keeps better, and sits more pleasantly upon the stomach: four grains and a half contain one of protoxide.

But the great secret that remains, is to procure the slate-coloured protoxide :—aqua calcis will not do, as it produces an ash colour, from a mixture of muriate of lime :—liquor potassæ alone will not do, nor will liquor ammoniæ.

PROTOXYDUM HYDRARGYRI.

℞ Calomelanus, ℥iv.; Liquoris Potassæ Puræ, ℥iv. vel q. s. tere simul, et adde Liquoris Ammoniæ Puræ, ℥ss.; Aquæ Distillatæ, q. s.

Wash well upon a filter; dry with a gentle heat, and use immediately.

The liquor potassæ produces a brownish-black powder, but there still remains a portion of submuriate of mercury undecomposed, which no addition of liq. potassæ will act upon, but by the addition of a small quantity of liq. ammoniæ, the slate-coloured protoxide is immediately produced, and the calomel completely decomposed.

HYDRARGYRUS CUM CRETA.

℞ Hydrargyri Protoxydi, p. j.; Cretæ P. p. ij. M.

Always the same, and always certain, a form which can never be produced by trituration.

UNGUENTUM HYDRARGYRI.

℞ Hydrargyri Protoxydi ℥ij.; Adipis Suillæ, ℔ j. M. s. a.

Equivalent for most purposes to the ung. hydr. fort. and a great saving of mercury. But, N.B., for this purpose, the protoxide should be obtained from the hydrargyrus muriatus mitis of the old Pharmacopœia, washing the precipitated submuriate while in a state of hydrate, as above. The colour completely resembles mercury, but for internal use, I prefer the decomposition from calomel.

Equal parts of protoxide of mercury and sulphur unite and form a fine black powder, similar to Æthiop's mineral, for which I originally intended it; but finding it too active for internal use, I now employ it as one of the best applications to chancre. It is a sulphuretted protoxide.

The above forms of Pulvis Antimonialis and of Pilula Hydrargyri Protoxydi, I have now used upwards of 20 years; and such is my estimation of their value in the cure of diseases, that if I wished to leave a legacy to my country, I think I could not

bequeath to her a greater boon. I have long found it unnecessary to use either James's Powder or the Pulv. Antim. of the Pharmacopœia; and I am quite sure that when the above preparation is universally known, not one single grain of that uncertain, expensive, and empirical medicine, James's powder, will ever again be sold. My great wish is to see the above formulæ introduced into the London Pharmacopœia.

I beg you to excuse my making use of the old terms, being of the old school I am rather attached to them.

Pharmaceutical Transactions, No. 9, p. 449.

6.—OPIUM IN PERITONITIS.

By Dr. Watson, Lecturer on the Practice of Medicine, King's College, London.

[The pamphlet published by Mr. Bates, of Sudbury, some years ago, on the treatment of severe peritonitis by opium, made a strong impression on the minds of some medical men. He recommended opium both by the mouth and rectum; and insisted on a rigid adherence to the horizontal posture, till all pain had subsided. Mr. Bates's practice, however, may be considered as chiefly valuable in those severe cases where, either from ulceration or injury, perforation of the intestine has taken place, and which have been supposed to be almost invariably fatal. Some very striking cases, however, are related by Dr. W. Stokes in the second number of the Dublin Journal of Medical and Chemical Science, which strongly confirm the opinions of Mr. Bates in cases where perforation is supposed to have taken place. Dr. Stokes truly remarks, that in many of these cases the patient sinks with awful rapidity, and gives no time to pursue the active treatment which is adopted in other cases. Mercury and purgatives would in such cases probably increase the the evil, by *tearing asunder* recent adhesions, and thereby preventing nature closing the communications between the mucous and peritoneal cavities. One of Dr. Stokes's cases is related as follows:]

The well-known symptoms of perforation of the intestines had existed for two days; the patient was apparently sinking, "his countenance was collapsed, anxious, and expressive of dreadful suffering; the extremities were cold, and the pulse hardly perceptible." The exhibition of sixty drops, in the twenty-

four hours, of the preparation called the *black drop* was followed by the most signal improvement. The pulse regained its fulness and softness, the extremities became warm, and the countenance had lost the Hippocratic expression. The patient could bear pressure on the abdomen, which, the day before was exquisitely painful. The same treatment was continued for twenty-four hours longer; and by the end of that time every symptom of abdominal inflammation had completely subsided. The belly felt natural, there was no tenderness, the pulse was good, and the patient declared himself well." At this period of the case, Dr. Stokes omitted the opium, and gave the mildest possible saline laxative, as there had been no stool for 48 hours. Four evacuations took place, followed by the immediate return of the symptoms of peritonitis, under which the patient rapidly sunk.

"The intestines were everywhere agglutinated together, and adherent to the parietal peritoneum, except in the left iliac fossa, where a quantity of yellow puriform matter was collected. On detaching the caput coli from the peritoneum lining the right iliac fossa, a small perforation of the gut was discovered, by the escape of the contents of the intestines in a jet, &c. &c."

[Dr. Watson then makes the following practical remarks on this treatment:]

This example puts in a very strong light the *good* effects of *opium;* the *dangerous* effects of *purgatives;* and the *mode* in which recovery from these frightful accidents *may* sometimes be brought about.

Dr. Stokes gives another instance in which the patient *did* recover; after taking 105 grains of opium, besides what was administered in injections: and he alludes to a third case, in which the employment of opium was successful, when peritonitis had supervened upon the bursting of an hepatic abscess into the cavity of the abdomen.

Now I would earnestly recommend you to consider the expediency of applying the same principle of treatment, as an auxiliary, when the peritonitis does *not* grow out of previous organic disease: in all cases, in short, of *mere peritonitis.* The opium is not to supersede the bleeding, nor the mercury; it is not incompatible with either of those remedies; and it

may, I believe, be most advantageously adopted in conjunction with them both.

I shall relate one example, which has lately occurred to me, of the successful use of opium in simple, but severe, peritonitis. Several of you saw this patient. His case is published in the appendix to Dr. Ferguson's volume.

H. Middlehurst, a tailor, 17 years old, was admitted into the Middlesex Hospital on the 17th September; looking very ill, and complaining of pain in the epigastrium, with extreme tenderness over the whole abdomen, which was full and tense. He had been ill several days; had shivered in the outset; and had vomited frequently, up to the period of his admission. His bowels were confined; his tongue was dry and white.

Twelve leeches were placed upon his abdomen, and calomel, in five-grain doses, was given two or three times at intervals of four hours. An enema of warm water was injected, and retained. In the evening sixteen more leeches were applied, and a drachm of mercurial ointment was rubbed into his arm.

I first saw him on the 18th. His countenance was then pinched and anxious, and he lay moaning with pain; his knees being drawn up towards his belly, which was tense, and exquisitely sensible to pressure. He complained of nausea and retching, but had not vomited since his admission. His tongue was thickly coated; his pulse small, sharp, 108 in number. No permanent relief had been obtained from the leeches.

I directed immediate venesection; but not more than four ounces of blood could be got from the arm. Thirty fresh leeches were therefore put upon the abdomen, and afterwards a warm poultice to receive the blood from their bites. Three grains of calomel, and three of blue pill, were ordered to be given every four hours.

The last leeches mitigated the pain; but it returned in the evening with increased severity, and he vomited the pills. He appeared to be in great agony. In this state the apothecary gave him twelve grains of calomel, and five grains of opium, in one dose. Soon after this he fell asleep; and slept during the greater part of the night. Next morning his countenance had lost, in a great degree, its expression of anxiety; his belly was less tender, but still tense; and his tongue cleaner. No stool.

Capiat pilulæ Saponis cum Opio gr. v. 8va. quaq. hora.

On the 20th the bowels were freely open, the dejections dark and watery; the abdomen was less tender. Pulse 114. He continued to take a grain of opium thrice daily till the 3d. of October: the bowels being every day moved; the pulse and tongue gradually improving; and the abdomen painless even under firm pressure. On the 3d, as the bowels had not acted for the last two days, I discontinued the opium. On the 5th, diarrhœa set in, with some renewed tenderness of the belly; and the pinched and anxious countenance returned. He had then an opiate enema; and resumed the opiate pills as before. Under this treatment he at length got well; and left the hospital on the 30th.

Medical Gazette, Feb. 25, 1842, *p.* 851.

7.—GOLD LEAF AND IRON FILINGS, AS A GALVANIC ANTIDOTE TO CORROSIVE SUBLIMATE.

By T. H. Buckler, M.D., Baltimore.

The compounds of mercury being, without exception, more or less poisonous, it would seem that the only single method of rendering them innocuous is to revive the metallic mercury, and thus separate it from the agents with which it is combined. Of all the compounds of mercury, corrosive sublimate—*bichloride of mercury, oxymuriate, corrosive muriate*—is the one for which it is most desirable to procure a suitable antidote. This agent, possessing so wide a range of chemical affinities, has baffled chemists for a long time in their efforts to decompose it in the stomach. The difficulty has arisen, of course, from the more or less poisonous nature of all its compounds. The inutility of seeking an antidote to an agent so deadly in its effects, may be urged by many, although it is not a more powerful irritant than oxalic acid, for which latter we have a ready and certain antidote. Even the observations which have been made on poisoning with prussic acid have been productive of practical advantage.

The importance of having a suitable antidote to corrosive sublimate is growing daily more apparent; for, setting aside the resorts to it for suicidal attempts, and its universal employment in destroying insects, it has been introduced of late in tanning, and to prevent the decay of timber; thus exposing

numerous operatives to the accident of swallowing it. Even a familiar acquaintance with its deadly nature is not always a guarantee against the risk. Thenard, the chemist, while at lecture, swallowed a concentrated solution, in place of water, but discovered his mistake before he had taken enough to prove fatal. A druggist of our city, inadvertently took from his counter a lump of the bichloride and swallowed it. He had eaten a full meal a short time before, and on taking an emetic of sulphate of zinc, the piece was instantly rejected. Numerous agents have been suggested to render this salt innocuous. The only antidotes now recognised are gluten and albumen; suggested by Taddei of Florence, and Orfila. Each promised to be perfect, when announced; but that of Orfila, for many reasons the best, is now the established antidote. Recent investigations have shown that albumen is not so certain in its action as was at first supposed, the precipitate which it forms being redissolved when the albumen exists in excess. We could not in the hurry of administering albumen give just so much as would neutralise the solution. Albumen acts by converting the bichloride into calomel, which renders the patient liable to be salivated; an evil in itself. Besides, toxicologists number calomel amongst the compounds of mercury for which it is desirable to procure an antidote. Perhaps, even, corrosive sublimate is not more active in its affinity for albumen than for the mucous membrane of the stomach.

[Dr. Buckler made the following experiments in the hope of discovering some antidote to mercury which might be more safely depended upon than albumen:]

The agents are iron-filings and gold-dust; and their action is referrible solely to galvanism. Place a drop of a solution of corrosive sublimate on a polished piece of gold or iron, the surface will remain bright for a long time, unless we bring the iron and gold in contact, through the solution, when both metals become instantly tarnished, the iron oxidised, and the gold coated with metallic quicksilver. If we drop into a solution of mercury a polished card-tooth, to which we have caused particles of gold to adhere, it will become tarnished the moment it comes in contact with the fluid, and a globule of quicksilver, combined with the gold, may be seen hanging to it, as it falls to the bottom of the solution. If we throw gold-dust into a solution of

mercury, no action will take place until we add iron-filings, when the metallic mercury is at once revived, and will be seen to precipitate, in a state of amalgam with the gold; at the same time the oxygen from the corrosive sublimate goes over to the iron, and forms an oxide of that metal, with which the chlorine combines, leaving a hydrochlorate of iron in solution. The products of this decomposition are wholly innocuous, the amalgam of the two metals being entirely inert, and the hydrochlorate of iron possessing only the properties of a slight tonic. Two grains of gold and two of iron are sufficient to decompose five grains of corrosive sublimate, so that no trace of mercury can be detected by the most delicate tests.

In order to ensure a rapid decomposition of the salts of mercury, it is important that both metals should be in the minutest state of division. The iron we used was reduced almost to an impalpable powder, by working a piece of steel with the finest file. The gold can be procured at all times, in the state of bronze; but as this is liable to impurities, it is better to have it powdered expressly, in the ordinary way, or by filing. Gold-leaf may also be used. Both metals should be so minutely divided, as to be capable of suspension for a short time, in any fluid, and form, when agitated in water, as it were, a gold-and-iron solution. For it is by the galvanic action excited at the moment that each particle of the one metal comes in contact with a particle of the other, that the corrosive fluid immediately surrounding them is decomposed; and hence, in order to render rapidly innocuous a considerable bulk of a solution of corrosive sublimate, it is important that both metals should be as widely and intimately diffused in it as possible.

This method applies to all the more soluble compounds of mercury. The deûto-iodide of mercury in water is instantly deprived of its bright vermilion lustre, on the addition of gold and iron, and a grey precipitate, composed of an insoluble iodate of iron, and an amalgam of gold and quicksilver, is the result. If we take the peroxide of mercury, (red precipitate, red oxide of mercury), and throw in gold and iron-filings, the oxygen of the precipitate instantly passes over to form a peroxide of iron, while the revived quicksilver amalgamates with the gold. So, likewise, the proto-nitrate and acetate of mercury, when similarly treated, form, severally, a nitrate and an acetate of iron, while the metallic mercury, being revived, combines, of course, with the gold.

The more insoluble compounds of mercury are not so readily decomposed by gold and iron; but they all of them act more slowly on animal tissues. These compounds are, cinnabar *(bisulphuret* or *vermilion),* turbith mineral *(*or *sub-bisulphate),* white precipitate (or *hydrargyrum ammoniacum* of the Pharmacopœia). Amongst them calomel may also be classed. Moreover, before any of the above-named substances can prove deleterious, some soluble salt must be formed by the action of the stomach, which, when formed, instead of acting on the coats of the stomach, will be decomposed by the presence of gold and iron. We intended to make a number of experiments on animals, aided by Professor Fisher, but owing to the illness of that gentleman, our plan was defeated. However, to ascertain how far the proposed antidote could be depended on, we procured four half-grown rabbits, on which the following experiments were performed, assisted by Mr. Stewart, one of the ablest chemists of our city:—

Experiment 1st. Injected into the stomach one grain of the peroxide of mercury, in ʒ ii of water, and, shortly after, five grains of iron-filings, and the same quantity of gold-dust, in half an ounce of water. No pain or distress. Ate shortly after, and has not since appeared the least sick.

Experiment 2nd. Gave to another rabbit three grains of the deuto-iodide of mercury, in ʒ ss of water, and used gold-dust and iron-filings, of each six grains. Result the same. The rabbit is now thriving.

Experiment 3rd. Injected into the stomach three grains of the white oxide of mercury, and, some minutes after, administered four grains of finely-divided gold and five of iron-filings. Perfectly well until the next day, when it seemed drooping. On the third day it ate, and is now perfectly well.

Experiment 4th. Injected into the stomach of the last rabbit four grains of corrosive sublimate, in ʒ ss of water, and used as the antidote, four grains of gold-dust and six of iron-filings, in ʒ ss of water. Ate shortly afterwards; no distress; now perfectly well.

In all a small quantity of gum was added to the antidote, to suspend the metals. As gold and iron in minute division might themselves have proved fatal in our first experiment, only one grain of the peroxide of mercury was given; a quantity insufficient to produce death, and yet calculated to cause great

distress, or loss of appetite. It appeared to be conclusive from this trial, that gold and iron exert no deleterious effect, and also that the peroxide must have been decomposed. We believe that one grain of the deuto-iodide of mercury would be sufficient to kill a rabbit. Distress is often occasioned where it is administered medicinally, in doses of one-eighth of a grain; and yet, in our second experiment, three grains were given, without sensible effect.

We have observed that gold and iron do not decompose the more insoluble compounds of mercury *out* of the stomach. The effect of those metals in our third experiment, in which three grains of the white oxide of mercury were given, may, however, be explained by the phenomena which occur in one method of making hydriodate of potash. Iodine and potash may remain in water without forming the above salt, unless a piece of iron be dropped in, when a play of affinities is at once aroused, and the iodine, leaving the iron, for which it has a powerful affinity, untouched, combines instantly with the potash. Now, a part analagous to that which the iron here plays is performed by the stomach, when the insoluble compounds of mercury are swallowed, and gold and iron are, at the same time present; the stomach forms, out of the insoluble compound, a soluble salt, which, instead of acting on the coats of that organ, is instantly decomposed by the antidote; the stomach, in every instance, being the medium, like the iron in the case of the iodine and potash, by which the affinities are brought into play.

Experiments have proved that a solution of six to twenty grains of corrosive sublimate in the stomach of a full-grown rabbit very soon produces difficult respiration, convulsions, and death. In our fourth experiment, therefore, on a half-grown rabbit, death must have ensued, unless the gold and iron had been given.

A solution of corrosive sublimate acts purely as an *irritant* or as a *caustic*, accordingly as a weak or a strong solution is swallowed. Between the irritant and the caustic strength of a mercurial solution, we deem it of the greatest importance to notice the difference. A solution, in its *caustic* strength, will produce an irrecoverable condition in a few minutes; whereas a solution only *irritating* in its effect, may remain for a greater time without producing any fatal lesion. For example: we

applied a saturated solution of corrosive sublimate to a blistered surface; it produced the most excruciating torment, and on examining the surface some hours after, the true skin had lost its vitality, in patches, which presented a white, polished, and shining appearance. At about the third day, all the parts which had assumed the character described, were found separated at their margins from the healthy skin, by a clearly-defined fissure, and between the sixth and tenth days they came away leaving healthy ulcers, with perpendicular walls, corresponding exactly with the thickness of the skin in depth. These sores healed up in a few days by granulations from their bases. On the contrary, if we apply a weaker solution (ten grains to the ounce) to a blistered surface, it produces an acute burning pain, and the true skin will afterwards be found inflamed, but no lesion will have taken place. With these facts before us, it would seem proper in all cases where a saturated solution has been swallowed, to give a quantity of water sufficient to dilute the solution, and destroy its caustic action, which, if not instantly arrested, must render death inevitable. This gives time to procure the antidote, having in the after-treatment simple inflammation of the mucous coat of the stomach to contend with. But the mercurial solution is not less fatal if time be lost in decomposing it. A gentleman, at one of our hotels, ordered a glass of cider, in swallowing the first mouthful of which he was warned by the taste that he had taken something wrong; in a few minutes burning pain in the stomach and along the œsophagus ensued, and it was found that a saturated solution of corrosive sublimate, in whiskey, had been taken. Albumen was freely administered, but death ensued on the third day. A servant, after using the solution in cleaning bedsteads, had heedlessly placed the bottle where the cider was kept. Now, in all such cases it would be proper to administer, *immediately*, a draught of water sufficient to destroy the caustic properties, and then give the antidote. The proposed antidote should be kept by the druggists in papers, containing each,

Finely-divided Gold, Ditto Iron, aa, ℈ii; Gum acacia, ʒss. M.

free from dampness, to prevent oxidation of the iron. In poisoning with any compound of mercury, one powder is to be stirred in a tumbler of water, and swallowed; if any of it is rejected, another powder should be given. If a solution of

mercury were swallowed, we could not expect much benefit to arise from the use of gold and iron, in any other state than that of dust. In case of poisoning with the insoluble compounds of mercury, if the dust cannot be obtained, then use the metals in the form of beads, fine chains, or any other shape in which they can be swallowed, for we believe that they would decompose the soluble salt with as much rapidity, at least, as it could be formed in the stomach.

We invite the attention of others to the subject; intending, however, ourselves, to renew the experiments already made.

Lancet, Jan. 22, 1842, *p.* 569.

[Mr. Barry, in the Pharmaceutical Transactions, makes the following comments on this paper of Dr. Buckler's.]

We shall better appreciate the merit of this proposal of Dr. Buckler, by recollecting that the iron, *per se*, would, at least in the first instance, bring the sublimate into the state of calomel; and that too, but slowly. On the other hand, the effect of gold *in contact* with iron, is not alone to hasten decomposition, but to make it complete, by evolving *metallic* mercury in combination as a harmless amalgam. This result, however, belongs solely to the thin stratum of fluid immediately enveloping the two contiguous particles of iron and gold. It is therefore essential that these metals should be in a state of division so exceedingly minute as to remain a short time *in suspension throughout the whole fluid of the stomach.* Every drop of that fluid must be made to contain a multitude of these particles, and yet the entire weight administered be very small. Is this object to be attained?

From experiments not yet completed, I entertain no doubt that this question may be answered in the affirmative; not as regards the division of *the gold*—because it is known to be perfectly easy; but as regards *the iron*, which I have found it to be a difficult task to sufficiently disintegrate. Dr. B. recommends "working a piece of *steel* with the finest file" till there is obtained, in adequate quantity, an "almost impalpable powder." I should be wanting in candour towards the author, were I to commend his process, as much as I feel at liberty to commend his principle. *Filing*, in this case, is almost useless, because the minutest particles are dispersed, and the remainder are found too large for suspension, even for the few moments

necessary. I am enabled to state this from having, not only employed a very careful person, but watched his progress. There is another inconvenience, which, however, could be overcome—the particles of steel so procured, are sure partly to float (as if they were greasy), and to resist admixture with water. It was probably in order to alleviate both these objections that the author proposed employing a small portion of mucilage. But mucilage would operate to *stagnate* the fluid, which ought on the contrary to be attenuated, so as to facilitate its circulation among the particles of metal.

There is another desideratum which Mr. B.'s process has not secured. He proposes to complete the galvanic circuit by the [accidental] *juxta-position* of the respective particles of iron and gold. The necessity for exciting galvanic action is manifest, from the consideration that *isolated* portions of iron acting, will, *pro tanto,* retard the desired species of decomposition, by generating calomel; which cannot be reduced to the metallic state so rapidly as sublimate. The desideratum then, to which I refer, is the production of the particles of iron, each in a state *partly gilt.* This remains to be accomplished, and I am directing my attention to it.

Pharmaceutical Transactions, No. 6, *p.* 306.

8.—ON INCIPIENT CANCER OF THE WOMB.

By Dr. Montgomery, A.M., Professor of Midwifery to the King and Queen's College of Physicians in Ireland.

[Dr. Montgomery is of opinion that there is a stage of cancer of the womb which is remediable, and the germs of which may be destroyed, a stage which precedes the two which are usually described by authors; "and the reason why this stage is not more generally recognised, is that the accompanying symptoms are frequently so slight as to attract very little the attention of the patient, and thus are suffered to remain without treatment, until a profuse hæmorrhage or some violent fit of pain sounds the alarm, and then on examination the disease is found to have passed into its second stage; the surrounding tissues are indurated and consolidated with the organ concerned." There is no doubt that many of these cases are entirely overlooked by practitioners, simply from not properly examining the vagina.]

The margin of the os uteri is found hard, and often slightly fissured, and projects more than usual, or is natural, into the vagina, and is irregular in its form.

In the situation of the muciparous glands, there are felt several small, hard, and distinctly defined projections, almost like grains of shot, or gravel, under the mucous membrane. Pressure on these, with the point of the finger, gives pain, and the patient often complains that it makes her stomach feel sick.

The cervix is, in most instances, slightly enlarged and harder than it ought to be. The circumference of the os uteri, especially between the projecting glandulæ, feels turgid, and to the eye, presents a deep crimson colour, while the projecting points have sometimes a blueish hue.

In two cases of women who died, one of fever, and the other, of pneumonia, in a more advanced stage of this condition of the os uteri, the substance of the uterus was found considerably increased in size and thickness, and was intensely vascular.

There is no thickening, or other alteration of structure in any part of the vagina, at its conjunction with which, the cervix uteri moves freely; nor is there any consolidation of the uterus with the neighbouring contents of the pelvis; in fact, the morbid organic change appears to be, at first, entirely confined to the os uteri, and lower portion of the cervix.

This stage of the affection is, in many instances, *very slow*, lasting, sometimes, *for years*, before the second and hopeless stage is established; during this time, the patient experiences only comparatively slight, and transient attacks of pain, or perhaps only sensations of uneasiness, referred often to the situation of one, or other of the ovaries, or about the os uteri, with anomalous tingling along the front and inside of the thighs; these last for a few hours, or a day or two, and then disappear, perhaps for weeks, but again and again return in the same situation, and for a long time, are not increased in severity; the patient finds that sexual intercourse, now, occasionally, causes her pain, which she ascribes to some deep-seated part being touched, and the act is followed by an appearance of blood; she is, also, often troubled with slight irritability of the bladder; but the appetite, digestion, and sleep, may, for a long time, continue good, and the pulse, generally, gives no indication of the existing disease, or its changes; an observation, which will be found applicable to many uterine affections of a very grave character;

in short, the general health may long remain quite undisturbed, nor has the patient, in many instances, the slightest suspicion, that there is anything seriously wrong with her, nor thinks of seeking for medical aid, until she is induced to do so, by the solicitations of her husband, or some anxious friend who has become, as she thinks, unreasonably alarmed about her state.

Pathology.—Sufficient observation has fully satisfied me, that, in the great majority of instances, the first discoverable morbid change which is the forerunner of cancerous affections of the uterus, takes place in, and around the muciparous glandulæ, or vesicles, sometimes called ova nabothi, which exist in such numbers, in the cervix and margin of the os uteri; (see my work on the Signs of Pregnancy, &c., pl. ix. fig. 2)) these become indurated by the deposition of scirrhous matter around them, and by the thickening of their coats ; in consequence of which, they feel *at first* almost like grains of shot or gravel under the mucous membrane, afterwards, when they have acquired greater volume by further increase of the morbid action, they give to the part the unequal, bumpy, or knobbed condition like the ends of one's fingers drawn close together. When this *second stage* (usually described by writers as the first) is established, all means hitherto devised have failed in producing any permanent beneficial effect.

Diagnosis.—The only affection of the uterus, for which this disease could be mistaken, and that only by carelessness, is, the irritable uterus; from which, however, it is essentially different; inasmuch as it is accompanied by, and tends to produce still further change in the structure of the organ ; which, although unduly sensitive under examination, is not the seat of the *exquisite* tenderness and pain observed in irritable uterus; from which, it also differs in having the increase of volume of the parts affected well marked, and constant, until removed by treatment, and in the existence of the other organic alterations already enumerated, as well as in the different result of the affection. From the second, or fully formed stage of cancer uteri, any one accustomed to examine the organ must at once distinguish it.

Treatment.—In almost every instance, the treatment should be begun by *the local abstraction of blood,* either by cupping, or by leeches applied directly to the os uteri, or as near as possible to the organ; and their application will, in most cases, require to be frequently repeated, and should be accompanied by

the free use of anodyne fomentations. With regard to *venesection*, although it may be desirable to practice it under particular circumstances, it is not, in general, required; and I would say, that the case in which it is called for, should be regarded as an exception in the plan of treatment generally most suitable.

Except there be something specially to forbid its use, *mercury* should be given, in some form, so as to bring the system very gently, but decidedly, under its influence; for which purpose, it may be combined with iodine in very minute proportions, with camphor, opium, hyoscyamus, or hemlock; and occasionally by friction, especially where there exists evidence of inflammatory action in the iliac hollow, as already adverted to.

Afterwards, *iodine* or *hydriodate of potash* may be used both internally and externally; and *iron* will be found a most beneficial and powerful agent, especially in the form of the saccharine carbonate, or the carbonate given in the nascent state.

The *iodide of iron*, which combines, to a certain degree, the powers of both remedies, may also be used with advantage in most cases, and will be best administered in the form of *Dupasquier's syrup*, which is now prepared, of different strengths, by our chemists and apothecaries.

Arsenic has received the testimony of many able practitioners in its favour, as an agent capable of giving great relief in these affections; and I can add mine to the same effect, having obtained marked benefit from its use, especially when combined with anodynes, even in advanced states of this disease: of *iodide of arsenic* I cannot speak from experience; but, I think, that, both from the nature of the compound, and, still more, from the success which appears to have attended its administration in cancerous affections by Dr. A. T. Thompson and Dr. Crane, of Canterbury, we are justified in expecting, that it will prove a useful remedy in such diseases.

Counter-irritation is an agent of great influence in this complaint, and may be established in a variety of ways, which it is unnecessary to enumerate; but a very effectual mode is, by making a small blister over different parts, in succession, and keeping it discharging freely for several days, by the application of the French dressing, or Albespeyer's papers.

The *warm bath* and the warm *hip bath* are means of great value throughout the treatment of this affection; and their

effect in soothing the uterine irritation may be much promoted, by admitting the warm water into contact with the internal surface of the vagina and os uteri, which may be accomplished, without difficulty, by introducing into the vagina one of Lassaigne's speculums, which are made of wire-gauze coated over with caoutchouc; or a small plain metal speculum, with perforations in its sides, will answer the purpose extremely well; and the patient can apply the instrument for herself, better, indeed, than any one else could. I may observe, that where warm baths are used in the treatment of amenorrhœa, this mode of managing them may be adopted, with great advantage.

After the removal of the congestion and organic changes from the os uteri, there remains, occasionally, a sensitiveness of the part, which causes the patient much discomfort, and which will be best relieved by the use of the bath, as above directed; conjoined with anodyne applications to the part, or the nitrate of silver in solution; the best mode of applying which, is by means of a bent glass tube, of about an inch in diameter, which the patient can introduce, and manage for herself; all that is necessary is, that she should lie on her back, and introduce the tube as far as its curvature, and then pour into the upper end, the medicated solution, which will immediately pass to the os uteri, and can be retained there, as long as is necessary, the tube filling the vagina sufficiently to prevent its flowing away, which is a great advantage, above all other methods with which I am acquainted, for applying lotions to this part.*

The patient should be strictly enjoined to avoid every thing that could stimulate the uterus, such as riding on horseback, &c.; but, especially, she should refrain from sexual intercourse. I need scarcely add, that the greatest care and moderation will be essentially requisite in the quality and quantity of the patient's diet. Wine, if used at all, should be of a very mild kind, and very sparingly taken; and the same rule should apply to malt drinks; the stronger kinds of ale and porter should be altogether prohibited.

* I have used these tubes, both straight and curved, to suit different purposes, with my patients, for some years; and find them greatly superior to every kind of syringe, or other contrivance for making applications to the os uteri. I wish to suggest, that if the fluid is to be used of an increased temperature, a metal tube should be substituted for a glass one, which would be in danger of cracking, and perhaps injuring the patient.

No circumstance connected with the treatment of this affection requires more scrupulous attention, than the regulation of the patient's habits and mode of living; indeed, if this be not very carefully managed, all other measures will most probably be defeated.

This is, perhaps, of all others, the case, in which, extirpation of the part might be expected to be successful; but I could not recommend it, because the operation is a very formidable one, and I know the affections to be curable, without it; besides, we have no means of accurately determining whether the taint is really thus isolated, or whether other parts are not already contaminated; so that, we run the chance of only obtaining that equivocal triumph, in which, an operation is blazoned forth, as being crowned with brilliant success, while the patient dies of the disease for which it was performed.

Dublin Journal of Medical Science, Jan. 1842, *p.* 436-444.

9.—ON CHOREA.

By B. G. Babington, M D. F.R.S., &c.

Dr. Babington remarks that,—previous to Dr. Hall's researches, the proximate cause of chorea was supposed to consist in debility, and some degree of irritation of the organic class of nerves; extending more or less to those of volition; and occasioning morbid susceptibility of the nervous system generally, with diminution of power, increased mobility, and irregular actions of the muscular system, particularly of those muscles supplied with the nerves principally affected.

Let us contrast this loose and general account of the pathology of chorea with that offered by Dr. Marshall Hall. He first maintains, as principles of physiology, that, besides the contractile power in muscular fibre itself, there are three causes of muscular motion:—1st, Volition; the seat of which is the cerebrum, and the action of which is conveyed along the fibres which decussate in the medulla oblongata. 2dly, The direct and reflex action of the excito-motory system. And 3dly, Emotion.—He affirms, that the seat of emotion is below that of volition; is in the medulla oblongata; and acts along fibres which probably do not decussate; and, that the seat of the the excito-motory system is in the spinal cord. He further

remarks, that volition has an aim or object; while emotion, and the excito-motory function (or *vis nervosa* of Haller), are aimless on the part of the individual, and frequently opposed to volition.

According to Dr. Hall's earlier papers, chorea was considered an affection of the true spinal system; affording an example of the want of harmony between the cerebral and the true spinal acts. The volition was affirmed to be normal; but the true spinal act to be abnormal, for want of a precise harmony between the two. This view, however, did not account for the absence of chorea during sleep: for it is one characteristic of the excito-motory function, that it goes on during sleep; so that a disease asserted to be dependent on a morbid condition of that function, ought to be at least as manifest during sleep—when volition, as a disturbing cause, is abstracted—as in the waking state: but the contrary is notoriously the fact; all the symptoms of chorea ceasing as soon as the consciousness of the waking state is suspended. It was necessary, therefore, to seek further for an explanation of this circumstance. "It is well known," says Dr. M. Hall, "that the irregular movements in chorea, and in incipient paralysis agitans, subside during sleep. I was long perplexed to account for this fact. It was only by observing that these movements subside during quiet sleep only, and return during the agitation of dreaming, that I perceived that it is not sleep, but the absence of emotion, to which this effect is to be ascribed;—dreams during sleep having the same effect as emotion in our waking hours." This, then, I take to be his view of the pathology of chorea—that it is a morbid condition of the organ of emotion, which has its seat in the medulla oblongata, and is wholly independent either of the brain or of the ganglionic system.

Dr. Babington adds:—

"I should define chorea to be a disease characterized by irregular uncontrollable contractions of the voluntary muscles, alternating with their atony, and occurring without pain. I have used the word 'contractions,' and have included the atony of the muscles in this definition, because the movements in this disease appear to me to differ essentially from those of convulsions and epilepsy in this,—that the stimulus, whatever be its nature, which excites either the whole or a portion of the voluntary muscles to involuntary action, is not more violent in

degree than the normal stimulus of the will, or of the excito-motory system; so that movements almost incessant indeed, but not exaggerated like spasms, are the result. It will illustrate my meaning, to state, that a person in sound health could, at any one moment, perfectly imitate, by an exercise of the will, every movement which he would involuntarily perform if he were the subject of the most aggravated form of pure chorea. Again, there is another circumstance which seems to me to attend the movements in chorea, and which may furnish ground of distinction between this and truly spasmodic seizures. The nerves, in their normal state, are always exercising a certain amount of influence over the muscles; so that where there is antagonism of forces, it is only necessary to remove the one opponent in order to demonstrate that the other is in a state of activity. This being the healthy condition, we have a right to consider the diminution of this activity as a morbid state; for although, from the striking effect which a morbid exaltation of muscular force produces, spasm is more directly brought to the cognisance of our senses than atony, still the latter is no less a really morbid condition than the former. I venture, then, to express my belief, that while, in true convulsions, the muscles, after having been thrown into a spasmodic state, do only return to the normal condition: in chorea, on the contrary, a further diminution of nervous influence occurs; so that the muscles become, in all marked cases, entirely passive and inert in the intervals between their irregular and involuntary actions. This is manifest, from the manner in which the limbs drop from the position into which they have been thus thrown; in which the head, after being tossed to and fro, will fall passively on the shoulders, and from the incapability on the part of the patient to hold any thing in his grasp."

Dr. Babington offers a good account of the history and symptoms of chorea. And his allusion to the exciting causes of the complaint is lucid. If we affirm, he says, that the primary seat of chorea is in the medulla oblongata and spinal marrow, we must at the same time admit that this may be affected through the medium of its connexion with the sensorium on the one hand, and with the ganglionic system on the other. Its exciting causes will thus naturally divide themselves into three kinds; namely, 1st, Those which primarily affect the spinal system: 2dly, Those which secondarily affect it through

the sensorium: 3dly, Through the ganglionic system. Blows on the head or neck, causing a *contre-coup,* which shall either structurally injure or functionally disorder the medulla, occasionally give rise to chorea, not only at the time of their occurrence, but at uncertain periods aferwards: so also injury of the spinal marrow, by direct compression; alteration of its structure by rheumatism; and perhaps its irritation, by certain injurious practices;—the irritation of the incident nerves, by a wound, by the poison of mercury, of lead, of strichnine, and by skin diseases. Of those causes which act primarily on the sensorium, by far the most frequent is an affection of the mind, arising from any of the depressing passions; as from sudden fear, from horror, from grief. Perhaps, however, these causes should be rather considered as of the first kind, if the theory be adopted, that the seat of emotion is in the upper part of the spinal cord, and not in the brain. Other causes more evidently first affect the sensorium; as, organic diseases of the brain, fever, epilepsy, hysteria, and mental alienation. Of those causes which act primarily on the ganglionic system, may be enumerated, costiveness of bowels, with morbid accumulations in them, and worms of different kinds. Rheumatism also, when it affects the heart and pericardium, may give rise to the disease, through the irritation of the plexus and ganglia, which so entirely surround that organ, and the origin of its great vessels: and irregular menstruation may produce a like effect, through the lumbar plexus.

In a note we find the connexion between chorea and cardiac affections noticed still more pointedly. We transcribe the note in question.

"Out of a very large number of cases of chorea, seen lately by my friend and colleague, Dr. Addison, to whom I am indebted for having first directed my attention to this point, only two have been without a decided mitral or left ventricular bruit. In these two there was diseased heart; and in one case, examined after death, there was found old thickening of the mitral valve, with very recent pericarditis. Should further investigation prove chorea to be more immediately dependent on disease of the heart or pericardium, than has been hitherto supposed, the merit of the discovery will certainly be due to Dr. Addison." But we cannot help suspecting it will turn out otherwise.

Dr. Babington relates twenty-five cases, none of which re-

quire notice. The gist of the matter—the treatment, is thus handled.

He has not found any one remedy so superior in efficacy to the rest, as to induce him to abandon all others in its favour. On the contrary, the most powerful will sometimes disappoint our expectations; and we are then obliged to try one after another; and in the end, perhaps, remain uncertain, should the patient do well, whether the recovery is to be attributed to the means employed, or to the power of nature herself. Dr. Babington, therefore, treats the cases *rationally*.

Where there is evidence of congestion in the head, marked by giddiness and headache, occurring in subjects of a full habit and florid countenance, the treatment should be commenced with moderate depletion: which, however, it would be more advisable to effect by leeches or cupping-glasses, than by the use of the lancet; and these should be applied to the nape of the neck, or behind the ears. Attention to the state of the bowels is of course, in all cases, indispensible, even though the general treatment should be of a tonic character: but wherever there is reason to suspect that the symptoms are dependent on a constipated or loaded state of the bowels, or their irritation from the existence of unwholesome aliment, purgatives should be administered freely and frequently; and those of the more active kind should be employed. As this state of the *primæ viæ* exists in a great many cases, it is not difficult to understand why the purgative plan of treatment has proved frequently successful. Where worms, and especially tænia, cause the irritation, turpentine, and other anthelmintics, will prove most successful; and these cases also will swell the list of those who will be benefited by brisk and repeated purgatives.

Where there is reason to believe that the disease is connected with the state of the uterus, occurring about the period when the catamenia should appear, and combined with symptoms of hysteria, those remedies will naturally suggest themselves which have a special power in causing this discharge, in obviating its irregularity, and in correcting its unhealthy character. The state of the teeth should also be looked to about the period of the second dentition; and even on the cutting of the dentes sapientiæ, as a probable source of irritation;—and the gums should be lanced, or the decayed roots of the first set removed, according to circumstances.

Where the disease has arisen from a metastatis of rheumatism to the fibrous structure of the theca of the cord, it ought to be treated in the same way as pericarditis,—by depletion, general or local, antiphlogistics, and the employment of mercury, carried to slight salivation.

The following are Dr. Babington's opinions on the subject and comparative value of tonics.

"In a very numerous class of cases which owe their origin to sudden emotion, producing a strong impression upon a weak and excitable nervous system, the patient will be most benefited by all those remedies which improve the general health, and give vigour and tone to the nervous and muscular systems. The most severe case I ever saw recover, was cured in a few days by divided doses of port-wine, in which enough of sliced rhubarb was steeped to render it gently aperient. Various vegetable tonics have had their advocates; but bark and sulphate of quinine may be taken to represent them all. The metallic salts and oxides have, however, of late years, being generally preferred. Sesqui-oxide and sulphate of iron, sulphate of copper, oxide and sulphate of zinc, nitrate of silver, and arsenite of potassa, have all been tried, and found, in different hands, to succeed. The testimonies in favour of sesqui-oxide of iron in large doses, and of sulphate of zinc, are perhaps the strongest. On the latter remedy I have generally, in the cases which I have just alluded to, most relied: and my expectations regarding its efficacy have seldom been disappointed. I have found it necessary to administer much larger doses, however, than are usually given; good effects seldom being perceptible until twelve or fourteen grains are taken three times a-day. By gradually increasing the quantity a single grain at a time, even much larger doses than this may generally be employed, without exciting sickness, and with the best effect. I have known half-drachm doses, thrice a-day, taken for several weeks in succession.

Sulphate of zinc, however, will not be borne by all stomachs, even in small doses; and we are then obliged to give up its employment, long before we have attained even the minimum dose requisite to give it a fair chance of controlling the disease. In such cases, I generally have recourse to the liquor potassæ arsenitis, cautiously increased in its dose from three to twelve or fifteen minims, according to the age and strength of the patient, and other concomitant circumstances. I believe this is the most

powerful remedy of all—at least I have found it so, in several obstinate cases; but I am deterred from employing it, where other remedies will succeed, from the sickness and griping pains which it is apt to cause, and from some fear that the constitution may be permanently injured from its continued employment.

As an external remedy, the shower-bath may be very often advantageously used, in conjunction with internal means; and I have even tested its efficacy with success, when used alone. In St. Petersburgh, I am imformed by a Russian physician, a new practice has, within the last year, being adopted with eminent success in obstinate cases of chorea. The patient is placed in a bath as hot as he can bear it; kept there for half-an-hour; and, when thus thrown into the most profuse perspiration, is suddenly plunged into cold water.—I have not ventured to try this method of producing a sudden shock; or rather, I should say that opportunity has been wanting, since I have been made acquainted with it; but in an extreme case, and when other remedies had failed, I should, on the testimony I have received in its favour, not hesitate to employ it.

Medico-Chirurgical Review, Jan. 1842, *p.* 251. *(From Guy's Hospital Reports, No.* 13.*)*

10.—TREATMENT OF SCIATICA AND OTHER FORMS OF NEURALGIA BY TURPENTINE.

By M. Martinet.

The essential oil of turpentine presents great differences in its mode of action, according to the dose in which it is employed. It also gives rise to certain peculiar phenomena, when administered in sciatica, crural and brachial neuralgia; and these phenomena, as we shall have to remark by and bye, are only observable in the affected member. Scruple doses, given in a convenient form, are speedily followed by these effects. In the majority of cases, the back part of the mouth, and the upper part of the œsophagus become the seat of a lively heat which is rapidly communicated to the other portions of the intestinal canal. At the end of a quarter, or at most of half an hour, this heat spreads over the loins, and the whole extent of the affected limbs, especially in the course of the painful nerves. In some individuals, a general sweating is produced, and in such cases

the transpiration from the affected limb is not always greater than that from the opposite limb. The other phenomena observed from such a dose of the oil of turpentine as that above mentioned, are want of appetite, belching, a feeling of weight in the stomach, difficult digestion, diarrhœa, and, rarely, an itching over the whole body. There is sometimes an increase in the secretion of urine, which, when this is the case, acquires a violet odour; and, last of all, there is dysuria, accompanied with more or less heat: but these last mentioned effects are far from being constant, and, even when they do occur, continue at most only for a few days.

The stimulant action of the oil is increased in proportion to the dose. Taken in a dose of from two drachms to an ounce, it produces nausea, vomiting, intestinal heat, tenesmus, and, in certain cases, slight gastro-enteritis, accompanied by fever. The urinary passages generally participate in the stimulating effect produced upon the intestinal tube, and there are symptoms of irritation of the kidneys, more or less acute. Frequently, a feeling of heat and pain passes along the ureters, to the bladder and urethra, and along with these symptoms, there is generally dysuria, or even strangury. In some subjects, we also see mucous discharges following the inconsiderate administration of this substance: but it must be remarked, that such untoward occurrences never happen in consequence of its use in moderate doses; and that they have only been observed in cases of epilepsy, tænia, and other severe and rebellious affections, requiring a dose of one or two ounces without any vehicle. It has several times happened in my own practice that patients have taken two drachms at once, without experiencing more than some colicky pains, vomiting, burning sensation in the stomach, looseness in the bowels, and, in rare instances, strangury; but all these symptoms of irritation were slight, and so transient as to require no treatment; indeed, generally it was sufficient to suspend the use of the linctus to see them disappear in three or four days.

The brain, in consequence of its sympathetic connexions with the stomach, sometimes experiences certain derangements during the use of this oil, which I have observed particularly in women, and nervous and irritable patients, viz. vertigo, a state of intoxication approaching to delirium, headache, more or less intense, accompanied with redness of the face, and which, as

well as the other phenomena of which we are speaking, seem to depend in a great measure upon the strong and penetrating odour of this volatile oil."

[M. Martinet attaches great importance to the form of administration. He says:]

It has been demonstrated to me by a great number of facts, that it is necessary to prescribe the oil of turpentine in a convenient form, to insure all the chances of success offered by this precious drug. On this account, its direct contact with the mucous membrane of the alimentary canal must be guarded against, so as to avoid the various unpleasant effects that might therefrom arise. With this end in view, the patient ought to be directed to take, half an hour after the turpentine, a soothing drink, or aromatic infusion. Honey, gum-arabic in powder, or calcined magnesia, are the substances most fit to be administered in conjunction with it; and although in the greater number of cases detailed in this memoir, honey was used, I would nevertheless observe, that this mixture, alike disgusting and disagreeable, is so repugnant to some patients, that they cannot swallow it. To avoid this inconvenience, and prevent the vomiting which sometimes ensues, I now mask the acrid taste of the turpentine by an aromatic syrup, by an inert powder, or, better still, by calcined magnesia, a plan which has of late been followed with the balsam of copaiba. The following is one of the methods of preparation which has appeared to me most convenient. I composed the formula in 1822, along with M. Caventou, one of the most distinguished chemists of our time.

Take the white of one egg; Essence of Turpentine, ʒ iij; Syrup of Peppermint, ℥ ij; Syrup of Orange Flowers, aa.

To be made into a linctus, of which three table-spoonfuls are to be taken per day.

It is sometimes necessary to add to this potion a certain quantity of laudanum, particularly when the stomach cannot support the presence of the turpentine. In this way vomiting may be prevented.

[The cases in which turpentine is indicated are thus described by M. Martinet:]

It is chiefly in sciatic and crural neuralgia, that this medicine

is most likely to succeed; but it may also be had recourse to with advantage in neuralgia affecting the superior and inferior extremities, and the face, of which I have given cases. The oil of turpentine is always indicated when the neuralgia does not depend upon an organic alteration, nor on a constitutional principle seated in the sciatic nerve, such as the virus of syphilis, which must be expelled by mercurial treatment. The chances of success are greatest when all the characters proper to neuralgia exist, such as acute pain, a tracing by it of the course of the nerves, and violent and quickly succeeding paroxysms; and this remark is applicable, be the disease chronic or acute, and whatever means have failed. Blessed be the medicine which can be regarded as an anchor of safety, when all the resources of art have been exhausted, and when the future seems to have nothing in store for the patient, but long and cruel suffering, or the thought more painful still, that he is labouring under an incurable malady!

London and Edinburgh Monthly Journal of Medical Science, Feb., 1842, *p.* 157.

11.—VALUABLE HINTS FROM THE DIFFERENT PHARMACOPŒIAS.

[There is a very able review of the Russian, Danish, British, and American Pharmacopœias in the British and Foreign Medical Review, from which we extract the following valuable hints on some important articles.]

Nitrate of Silver.—The analogy between *Gonorrhœa* and purulent ophthalmia might very naturally lead a practitioner to employ nitrate of silver in the cure of the former, if he reasoned at all correctly in the matter; for they are both purulent inflammations of mucous membranes. Many of the agents used as injections in gonorrhœa, such as the sulphates of zinc and copper, acetate of lead, bichloride of mercury, sulphate of alumina, &c. excite more or less inflammatory action in the urethra, and in scrofulous subjects sometimes do more harm than good; but the nitrate of silver, in place of exciting more, generally diminishes inflammation, and on this account may be employed at the very commencement of the disease. We have used this remedy for the last ten or twelve years with

much more success than any other injection, and have had no reason to believe that it causes hernia humoralis or any other bad consequeuce. The proportions we employ are from 1 to 4 grains to an ounce of water, the strength being regulated according to the greater or less inflammation of the parts.

The tincture of camphor is so generally reckoned a sovereign cure for *Chilblains,* that many practitioners would think it heretical to use any other remedy. As far as our experience goes, this agent very often fails in affording relief, and is less effective than the nitrate of silver. A pretty strong solution of this is required, the strength being varied from 10 to 30 grains of the lunar caustic to an ounce of water. Occasionally we have used the proportion of a drachm to the ounce of water, and even more. In one obstinate case, we used a saturated solution (equal parts of nitrate of silver and water), which produced a permanent cure.

An ointment made from galls is a favorite remedy for *Hæmorrhoids,* but, like camphorated spirit of wine in the cure of chilblains, it often fails. An ointment composed of from 5 to 10 grains of nitrate of silver, very finely pulverized, and an ounce of lard, succeeds in many cases where the hæmorrhoids are recent. When hæmorrhage arises from internal piles, or from congestion of the lining membrane of the anus, the solution, in the proportion of from 10 to 30 grains to an ounce of water, injected with a syringe, is a preferable method. It ought, however, to be remembered that when the solution is strong, not more than a drachm of it should be thrown into the rectum. In prolapsus ani the efficacy of this solution is not so certain, although we have on several occasions succeeded in curing the patient with it.*

Irish or Carrageen Moss, (Chondrus crispus.)—This fucus is found abundantly on the coasts of Ireland; and within the last ten or twelve years has attracted some attention as a

* [In our fourth and last Retrospect, article 59, will be found an interesting communication on injections in Gonorrhœa by Mr. Acton, in which he states that Mr. Carmichael, of Dublin, occasionally uses injections of nitrate of silver of great strength, 10 or 12 grains to the ounce. In this opinion, however, we find Mr. Acton is completely mistaken. Mr. Carmichael has published his denial of this practice, and states that he usually begins with a quarter of a grain to the ounce of distilled water, increasing the proportion gradually to that which can be borne with impunity, but this seldom amounts to a grain to the ounce.—*Dublin Medical Press, Dec.* 15, 1841, *p.* 379.]

substitute for arrow-root, sago, &c. It has, however, been long known in Ireland, and highly esteemed by the peasantry on the western coast as a nutritive article of diet and as a remedy for consumption, diarrhœa, scrofula, and diseases of the kidney. Mr. Pereira gives a short account of its properties and uses, a portion of which we shall lay before the reader, as no account of this vegetable is to be found in our ordinary works on materia medica.

"In the recent state it is purple-brown or purple-red, becoming greenish and untimely whitish in decay. As met with in commerce it is dry, crisp, mostly yellowish or dirty white, but intermixed with purplish-red portions, inodorous or nearly so, with a mucilaginous taste. It swells up in water, A calcareous meshy crust (consisting of various species of Flustra) is frequently found on the frond.....It is usually exhibited in the form of decoction or jelly.

"1. *Decoctum Chondri.*—Macerate half an ounce of carrageen in cold water, during ten minutes; then boil in three pints of water, for a quarter of an hour. Strain through linen. Milk may be substituted for water when the decoction is required to be very nutritious. By doubling the quantity of carrageen a mucilage is procured. Sugar, lemon-juice, tincture of orange-peel, or aromatics, as cinnamon or nutmeg, may be employed as flavouring ingredients.

"2. *Gelatina Chondri.*—Prepared by concentrating the decoction, or by employing a larger quantity of carrageen." (pp. 563-4.)

The following is M. Beral's formula for preparing what he is pleased to call analeptic or restorative milk, which perhaps may be interesting to some of our dietetic practitioners: Take milk 24 ounces, Irish moss 4 scruples, sugar ½ ounce, canella or cinnamon 1 scruple: macerate the moss in cold water for a few minutes, then shake the water out of it, and boil until the liquid attains the consistence of warm jelly; when cold it has the consistence of cream. In the Danish Pharmacopœia the proportions given for making "Carraghen-Mos-Gelée" are 2 drachms of the moss to 12 ounces of milk.

Creosote.—We shall assume that the general qualities and administration of this medicine are pretty well known, and will therefore only allude to one or two points connected with its therapeutic agency. As an internal remedy we consider cre-

osote chiefly valuable for its powers in checking vomiting, arising from irritability or derangement of the digestive organs, and we have tried it so extensively as completely to satisfy ourselves upon this point. It would be an exaggeration to say that it scarcely ever fails; but certainly it succeeds more frequently than any other agent we have tried in such cases. We agree with Mr. Pereira in thinking that it frequently fails where the vomiting depends upon organic disease, but even in some of these cases, a temporary relief is obtained from it. There are some essential oils which are also very efficacious in checking vomiting, such as the oil of cloves, which we have often employed, particularly in affections of the digestive apparatus occurring in children, who could not be induced to swallow creosote. The formula we employed is 8 drops oil of cloves, 2 drops liq. potass., 30 drops of sp. æth. nitros., 2 ounces syrup, rubbed up together in a mortar. Occasionally the addition of a little magnesia, laudanum, or tincture of hyoscyamus is useful, if there be acidity, diarrhœa, or pain from flatulency. Dr. Elliotson and others have recommended creosote in the treatment of diabetes. We have tried it both in the saccharine and insipid form of the disease, and, as far as our experience extends, with very little effect in altering either the quantity or quality of the uninary secretion. As an agent for checking hæmorrhage it is worthy of a more extensive trial than it appears to have received from the profession. In such cases it appears to act principally by coagulating the albumen of the blood, and thus forming a solid barrier to its impetus, nearly on the same principle as nitrate of silver acts, by the formation of a slough.

Croton Oil. In cases of constipation accompanied with vomiting, its combination with opium is often advantageous, exhibited in the form of a pill, viz. two or three drops of croton oil and one grain of opium. The opium tends to relieve the vomiting, but does not prevent the purgative operation of the oil, which generally takes place in a few hours after the dose is swallowed. We have found the oil a valuable addition to the compound colocynth pill as a laxative in very obstinate conditions of the bowels, in the proportion of one eighth of a drop to each pill.

Ergot.—When this agent is employed judiciously and in the proper dose we believe that injurious results are rare; but

on the other hand, when given in large doses, at improper stages of the labour, during the existence of formidable impediments or during first labours that are lingering, the danger of inducing the death of the child is very considerable. Various hypotheses have been formed by authors to account for its modus operandi in killing the child. Some have supposed that it does so by the violent continuous action of the uterus causing an obstruction of the circulation of the fœtus. This conjecture is by no means improbable, and is supported by the physiology of natural labour. In the natural process, after the occurrence of one uterine pain, there is an interval of repose before the accession of another; and any partial injury from pressure during one of these efforts is recovered from, by the fœtus, during the intervals of ease. But in labour accelerated by the ergot of rye, the uterine pains have generally no interval, but are positively continuous; and if the child be not expelled before the expiry of several hours, it is fair to infer that the constant pressure must have a tendency to cause asphyxia. As an additional proof that this explanation is correct, we have repeatedly observed, when the pains were violent and continuous, after the exhibition of ergot, or when the delivery was protracted much beyond the usual period, that the child was languid or did not respire for some minutes, which symptoms were accompanied with lividity of the lips and laborious breathing. The narcotic influence of the ergot has also been brought forward to account for the asphyxia of the fœtus; but if it operated in this manner, the child would labour under the injurious effects of the poison for some time after birth, which is by no means the case, for as soon as the function of respiration is completely established, it appears as lively as other new-born infants. Another hypothesis has been advanced, viz., the detachment of the placenta previous to the birth of the child; but if this opinion were tenable, the discharge of blood which usually occurs on the detachment of the placenta ought to take place immediately after the expulsion of the child, which is not agreeable to experience.

Besides the ordinary obstetrical rules which are laid down by authors for the exhibition of ergot; there are two points connected with its administration, which are not alluded to by Mr. Pereira, and which have not been prominently brought forward by any writer on the subject; viz., the dose that should

not in ordinary cases be exceeded, and the more frequent death of the fœtus after its exhibition in first labours. The quantity that we have from experience, and we have used it frequently, found safe, is from twenty to twenty-five grains, given in the form of infusion, the pulverized ergot being also swallowed. On theoretical grounds a person might be apt to imagine that if ergot of rye were harmless in second or subsequent labours, it could not be injurious in the first. If, however, we attend to the fact, that the large majority of first labours are tedious; and that the ergot has by no means the same influence over them as it has in other cases, we shall at once see that the fœtus must be much longer under the continuous compression of the uterus in the one case than in the other. So much are we convinced of the truth of what has now been stated, that though we exhibit ergot frequently when the os uteri is sufficiently dilated, and the head well advanced, we have not for several years prescribed it in *a first case* under the same circumstances.

[It gives us pleasure to see such respectable authority so nearly correspond with our own views of the pernicious effects of ergot when given in too large doses and too early in labour. We have already published our opinion on this subject in article 59 of our first Retrospect; in which, we believe, we were the first to suggest that the bad effects of this drug depended on the state of asphyxia which it produced in the fœtus, owing to the almost continued interruption of the circulation in the vessels of the maternal portion of the placenta.]

Mistura Scammonii.—[This is a convenient formula for children: it is as follows:]

Take of resin of scammony seven grains, unskimmed milk three fluid ounces: triturate the resin with a little of the milk, and gradually with the rest of it till a uniform emulsion is formed.

British and Foreign Medical Review, Jan. 1842, *p.* 62-82.

12.—TREATMENT OF PAINTERS' COLIC.

By Dr. C. J. B. Williams, F.R.S., Professor of the Practice of Medicine, and Clinical Medicine, &c., University College.

[In the 4th and last number of our Retrospect, (article 24,) will be found an ingenious method of treating this obstinate

affection, by means of putting the patient into a warm bath, and giving him an enema whilst in the bath. This, however, might not always succeed. Dr. C. J. B. Williams' treatment, is not only the exhibition of powerful purgatives, but the combining them with Belladonna, in order to relieve the excessive pain, and following up this with alum, when the bowels have been freely opened. In the following case the bowels had not been opened for three or four days. The following was prescribed :]

℞ Hydrarg. Chlorid. gr. iv.; Extr. Belladonnæ, gr. ss. Cap. statim.

℞ Olei Crotonis, ♏ij.; Extr. Belladonnæ, gr. ss. micæ panis, q. s.; Fiat pilula 3tia. quaque hora adhibenda donec plene soluta fuerit alvus. Abdomini admov. hirud. xij.; et postea foveatur abdomen.

20th.—Vomited last night; and after taking four of the pills the bowels were very freely opened. He has been quite easy ever since, and there is no tenderness or tension of the abdomen. Slight nausea; some pain across the loins, and tenderness in the soles of the feet; pulse natural.

℞ Aluminæ Sulphatis, gr. x.; Aquæ Menthæ Pip., ℥iss.; Acidi Hydrocyan. dil. ♏v.; Fiat haustus ter die sum.

21st.—Continued well, but the bowels not being opened, he was ordered an ounce of castor oil, which, after operating, brought back a slight return of pain in the belly. This was speedily relieved by adding ½ a grain Extr. Belladonnæ to his draught. After this he only complained of pain and tenderness of his legs and soles of his feet; after taking a few doses of quinine, he was dismissed cured, Aug. 3d.

The effect of lead on the bowels seems to be to impair their peristaltic action, whilst if it do not increase, it certainly does not impair their sensibility. Unable to contract on their contents, portions of the intestines become distended with fæculent matter and gas, which, irritating their sensitive fibres, cause the severe colicky pains so much complained of. At first these pains are often relieved by pressure, which counteracts the distension; but often the bowels become so generally sore and tender, from the continuance of the irritation, that external pressure is hurtful. So too, if the bowels be not relieved of their contents, enteritis may result with all its pernicious consequences.

In the present case, as usual, the great indications were to

stimulate the paralysed intestines into action to expel their irritating contents, and at the same time to lower their sensibility, and thus relieve the pain. As there was tenderness as well as pain, it was thought safe to apply leeches and fomentations, to remove any inflammatory affections that might have commenced; but the chief means of fulfilling the indications were by purgatives and narcotics. The purgatives chosen were of the most active kind, calomel and croton oil, under the impression that those which can soonest answer their end are in truth the least irritating. The narcotic selected was extract of belladonna; its peculiar eligibility depending on the fact that although powerful in deadening sensibility and convulsive action, it does not appear materially to injure the vermicular motions of the intestines, or to arrest the secretions, as opium does. In my experiments on animals, I was surprised to find, in animals poisoned with belladonna and stramonium, how well the intestines retained their irritability, when that of the bronchial fibres was quite destroyed. In this and other cases in which I have tried it, this combination answered very speedily and satisfactorily.

After the bowels were fully opened and the pain relieved, alum was given to promote the chronic contraction of the intestines, still combined with belladonna to prevent a return of pain. Alum has been much given of late in Paris, as a remedy in painters' colic; and I believe that its efficacy depends on its local tonic or astringent effect; but it is of no use till after the bowels have been well opened.

The neuralgic tenderness and pains in the legs, which the patient complained of, after both attacks of colic, may be ascribed to the direct presence of lead in these parts; but I am more inclined to class it with the cramps of cholera and other affections attended with irritation of the intestines. Pains and cramps in the lower extremities are very common symptoms of disorder in the colon. They probably depend on a reflex action, by which sensations as well as motions are excited in distant parts. Many other instances of what are called sympathetic pains are probably of this kind: such as pain in the right shoulder with disease of the liver, pain in the breasts in dysmenorrhœa, &c.

Medical Gazette, Dec. 17, 1841, *p.* 478.

13.—FURTHER OBSERVATIONS ON ASPHYXIA.

By John Snow, Esq.

[In our last Retrospect (No. 4, Article 27,) will be found some very interesting remarks on this subject, by Mr. Snow and Mr. Edwards. In the Westminster Medical Society, an animated discussion took place, in the next meeting following the publication of Mr. Snow's opinions; when that gentleman protested against the method of resuscitation adopted by the Royal Humane Society. He said:]

Dr Edwards had shown, by a numerous set of experiments, that the progress of Asphyxia was much more rapid in all classes of animals at blood-heat than at inferior temperatures. The same physiologist had likewise shown that the quantity of oxygen consumed and the necessity for respiration, kept a direct ratio with the development of animal heat; and, likewise, that the application of heat to the body increased its power of developing caloric, whilst the abstraction of heat by means of any cold medium had a contrary effect. Every one might observe that when the body was heated by exercise, or by any other cause, the necessity for respiration became much increased, and that breathing could not be stopped only for a few seconds without inconvenience, and even danger. Now, it was the stoppage of respiration that was the cause of mischief in drowning, as in every case of asphyxia; and withdrawing a person from the water would be of no avail unless respiration were re-established, for otherwise the process of asphyxia would be going on; therefore the warm bath, by putting the system in a state which required more oxygen, would hurry on the process of death, if it did not at once cause the acts of respiration to commence. But the mechanical acts of breathing belonged to animal, not to organic life; they were, indeed, almost voluntary acts, and the warm bath, to rouse these, must do it through the nervous system. In the progress of asphyxia, however, voluntary motions ceased first, next the convulsive motions, and the period when they might be excited by stimuli ceased; and the action of the heart, a languid circulation and some slow organic changes were the last signs of life to depart. It was clear, then, that the warm bath could only restore some persons not far advanced in asphyxia, who might easily be restored without it; whilst, in other cases, it would extinguish those small sparks

of vitality they were anxious to cherish and light up into a flame. They had had fearful proof of the correctness of these views, from the statement of Mr. Woolley, that he had not found artificial respiration of benefit after the warm bath failed to restore life. Mr. Woolley had told them that five or six minutes was the longest period he had ever known any person to remain under water who was afterwards restored; but in the early reports of the Royal Humane Society, when only warm blankets, and similar less energetic means of applying warmth were resorted to, several persons were resuscitated after being more than ten minutes submerged, two or three persons more than twenty minutes; and in one of these cases there was the clearest proof that the person must have been, at least, twenty minutes under the water. In an early report of the society at Amsterdam, for the recovery of persons drowned, (the first society of the kind which was formed,) it was stated that of the persons who recovered many had been but a few minutes under water, some a quarter of an hour, others half an hour, and one a whole hour. He knew no reason why these accounts, reported by scientific people, ought to be disputed. We heard often in our own days of persons being restored after lying some time before assistance was procured; and, if a person might remain five minutes under water, and ten more before any kind of breathing was set up, he might, undoubtedly, remain fifteen minutes submerged with an equal chance of recovery. It would always be a most dangerous state when total insensibility was produced by asphyxia; but we ought not to despair even when it had continued a length of time. Sir Benjamin Brodie had stated, that when the heart had ceased to act in asphyxia, or even ceased to act sufficiently to circulate the blood, it would be impossible to restore its action by artificial respiration. He (Mr. S.) had related in his paper, that he, in some measure, restored the action of the heart in a guinea-pig that had been dead an hour, by artificial respiration; and he could now bring forward the evidence of one of the greatest physiologists that ever lived on this subject, that of John Hunter, in the paper already alluded to:—"The muzzle of these bellows was fixed into the trachea of a dog, and by working them he was kept perfectly alive. While this artificial respiration was going on, the sternum was taken off, so as to expose the heart and lungs: the heart continued to act as before, only the frequency of its

action was greatly increased. Mr. Hunter then stopped the motion of the bellows, and observed the heart became gradually weaker, and less frequent in the contraction, till it left off moving altogether; but, by renewing the operation, the heart began again to move, at first very faintly, and with longer intermissions, but by continuing the artificial breathing, the motion of the heart became as frequent and as strong as before. This process was repeated upon the same dog ten times, sometimes stopping for five, eight, or ten minutes. Mr. Hunter observed, that every time he left off working the bellows the heart became extremely turgid with blood, and the blood in the left side became as dark as that in the right." This experiment of Hunter's proved, at least, that the heart might in some cases be restored to action by artificial respiration after it had ceased to beat. But, even supposing Sir B. Brodie's opinion to be correct, it would not justify the use of the warm bath in the first instance, since the heart would continue to act after the muscles of animal life had lost their irritability. The very slow and gradual manner in which respiration became renewed after apparent death, ought to deter one from at once placing the patient in a state in which he must either have a full and extensive respiration or perish. He would quote another passage from the same paper of John Hunter, in which that great man seemed, by his wonderful penetration, to have foreseen the laws of animal heat since made known by Dr. Edwards. After alluding to artificial respiration, it is stated—"While this business is going on, an assistant should prepare bed-clothes, carefully brought to a proper degree of heat." Heat, our author considers, as congenial with the living principle—increasing the necessity of action it increases action; cold, on the other hand, lessens the necessity, and, of course, the action is diminished: to a due degree of heat, therefore, the living principle owes its vigour. From experience, he says it appears to be a law in animal bodies, that the degree of heat should bear a proportion to the quantity of life; as life is weakened, this proportion requires great accuracy, while greater powers of life allow it greater latitudes. The servants of the Royal Humane Society should have an instrument for artificial respiration in the boat with them, and use it the instant a body was got out of the water, without power to breathe; the cold, if not very intense, so far from being prejudicial, would be favourable to

the maintenance of any latent vitality which remained. In cases where the apparatus was not at hand, artificial respiration should be performed in the mode proposed by Mr. Dalrymple, i. e., by tearing a sheet into the form of a many-tailed bandage, and alternately compressing and setting free the chest by this means. Rubbing the bodies of persons apparently dead had proved useful, he considered, by the pressure it occasioned on the chest and abdomen, and which might set up a slight current of air to and from the lungs.

Lancet, Nov. 6, 1841, *p.* 212.

14.—ON THE HOT AND COLD FORMS OF RHEUMATISM AND THEIR TREATMENT.

By Dr. Taylor, Professor of Clinical Medicine in University College, &c.

[The first patient upon whom the following clinical remarks were made, was a cabman, exposed to all kinds of weather: he had syphilis about three years ago, and was in the habit of taking freely of spirits. About two months before admission into the hospital he was wet through, and this was followed by the rheumatic pains, first in the head, and then all over the limbs:]

The only disease with which this could be confounded was secondary syphilis. The man had had syphilis three years before, and had had occasional pains in his limbs ever since, but he had been constantly exposed, as a cabman, to the causes of rheumatism; there was no irregularity of the spine of the tibia, and he had had no other secondary symptoms. It was necessary not only to distinguish whether the disease was rheumatism, but also the *kind* of rheumatism. One of the most important practical divisions of this disease was into the hot and cold forms. In the hot rheumatism, the pains were aggravated by the heat of the fire and of the bed-clothes, and there might, or might not be, in addition, local increase of temperature with more or less febrile reaction. On the other hand, the pains were relieved by cold—by uncovering the part, and in some cases even by cold applications. In the cold rheumatism, the pains were increased by this exposure, and were relieved by warmth, by approaching the fire, by flannels, and abundant clothing: in some cases the patients felt chilly, and

complained that they never could get warm; the skin was often pale and the surface cool. In making this diagnosis it was important to know that in both forms the pains were worse at night than during the day. Patients on being asked if they felt worse when warm, often replied that they were worst when warm in bed at night; but this answer was not enough, we must inquire the effect of heat and cold during the day. It was necessary not to confound the hot and cold with the acute and chronic forms of rheumatism. The acute rheumatism was always hot, but the hot rheumatism was not always acute; it might go on for many months, and therefore be of the chronic form. The cold variety, however, was generally, though not necessarily, chronic; he first learnt this distinction from Dr. Elliotson, and had since verified it in innumerable instances. Whether the observation originated with Dr. E. he did not know. The value of the distinction consisted in its affording a guide to the treatment; the one variety being chiefly, not exclusively, relieved by one class of remedies; the other by a different class. It was in the hot rheumatism that bleeding, general and local, colchicum and mercury, were most serviceable: in the cold form, stimulating remedies were more useful, such, for instance, as guaiacum, steel, rubefacient liniments, the hot-bath, and iodide of potassium. In the present case, the disease belonged to the cold form; the patient had suffered more or less during a great part of the preceding winter, and he had become considerably reduced in flesh; the heart offered nothing morbid with the exception of the sound at the base; the second sound was less clear than in health, and had a dry and hard character; it was such a sound as might be supposed to arise from valves whose texture had become less flexible and more rigid, and it had been observed to accompany a thickened state of the valves.

This was the opinion put forth by M. Bouillaud, and Dr. Taylor had made the same observation independently of him. The valves might still perform their functions, but less readily, perhaps, than in their healthy state: M. Bouillaud had termed this sound "*bruit de parchemin*," from its supposed resemblance to that which might be produced by valves made of parchment.

Causes—The cause in this case was that almost always observed in rheumatism; namely, exposure to cold. The patient

was a cabman, out in all kinds of weather, and during a great part of the day.

Treatment.—The medicine administered was the iodide of potassium, which was, perhaps, the most generally useful. All remedies would fail in particular cases, but this, perhaps, less frequently than any other. The dose was three grains at first, but was gradually increased, until an effect was produced. Fomentations were ordered to the right leg a day or two after his admission, with immediate relief to that part; and this was all that was done, in addition to giving the medicine. For three or four days no amendment was observed in the pains generally, but about that time they began to yield, and soon disappeared entirely.

The patient's appetite returned, and he was discharged cured, on the 24th, about a fortnight after his admission. The patient had suffered during a great part of the winter, and his general health was much impaired by suffering. Dr. Taylor remarked that he had repeatedly seen cases of rheumatism, especially those affecting the fibrous tissues, and which had resisted other modes of treatment for months, yield in a few days to the iodide of potassium.

About a month after his discharge, the patient was readmitted, nearly as bad as before. There had been a succession of wet days when he had been out, and the symptoms were reproduced. On this occasion the form of the disease was the same, it was only a little less severe. The same treatment was prescribed, and continued for several days, but without the slightest effect: whether, if persevered in, it would have made any impression, was uncertain, but it was continued longer than the time in which an improvement was produced in the first attack; and generally the iodide of potassium produced its effect in a shorter time than this. The guaiacum mixture, with the compound tincture of guaiacum, was given on the first of November, and it produced almost immediate relief. The patient felt better after he had taken four doses only of the medicine; and this improvement went on and continued permanent: the only other sensible effect it produced, was a pretty abundant perspition. On the 6th of November the patient was discharged well. Dr. Taylor remarked that the result of the treatment in this case was very interesting: he had before stated that different classes of remedies appeared to be suited to the hot and the cold

rheumatism, and that in each form the same remedy succeeded at one time and failed at another. He had frequently thought that closer observation might enable us to discriminate the particular cases suited to each remedy; and had observed, for example, that the iodide of potassium was peculiarly useful in cases in which the disease affected the fibrous tissues, as that over the tibia and in the scalp. In this case, however, there was no apparent difference in the disease to explain the different results. The second attack was only rather less severe than the first; the form and seat of the disease were the same, as were also the age, strength, and the external circumstances, as food, lodging, and, of course, the constitutional peculiarities of the patient. No two attacks could be more completely alike, and yet in one the treatment was speedily and completely successful, whilst in the other the same treatment as completely failed.

Lancet, Dec. 11, 1841, *p.* 347.

15.—PARALYSIS TREATED WITH CANTHARIDES.

By Dr. Seymour, Physician to St. George's Hospital, &c.

[The tincture of cantharides is given, by Dr. Seymour, in very large doses, in cases where the paralysis cannot be traced to any affection of the sensorium, and where there is no trace of organic disease. In the case which was commented upon by Dr. Seymour in one of his clinical lectures, the patient had entirely lost the use of the upper limbs and had a weakness of one leg. In a great majority of such cases, we should find a disease of the vertebræ above the seat of the injury, and there would be pain on pressure or on percussion; but in this case this symptom was entirely absent, and if there had been any actual disease of the spinal marrow, we might have expected to find the diseased action continued to the lower extremities, as well as to the upper: but such was not the case, as every part below the upper extremities appeared perfectly sound and healthy. In such a case as this Dr. Seymour ventures to give 40 minims of the tincture of cantharides twice a-day.]

Provincial Medical and Surgical Journal, Feb. 10, 1842, *p.* 405.

16.—ON THE SOLUTION OF URINARY CALCULI BY THE WATERS OF VICHY.

(Being a Report of the Academy of Medicine, of Paris.)

[Although we cannot agree with all that is advanced in this report, we think that it contains much information which ought to be generally known. It is translated by Mr. B. Phillips. The following is an analysis of the water furnished by the spring called the *Grande Grille*, with which the experiments were made.]

Temperature, 32° *to* 34° *Reaumur*.

Water	992·5
Carbonic Acid	0·9
Carbonate of Soda	4·9
„ „ Lime	·3
„ „ Magnesia	·08
„ „ Iron	·01
Muriate of Soda	·5
Sulphate of Soda	·4
Silica	·07

[It is very interesting to observe the gradual changes and improvements which have been from time to time introduced into practice, regarding the treatment of urinary concretions. This is very ably shown in a paper in the British and Foreign Medical Review, for October, 1841, p. 388, and which is well worthy of perusal by the whole profession. Magendie proved more particularly than had hitherto been done, that certain aliments have an important effect on the composition of urine. Dr. Wöhler proved in a prize essay, that the alkaline carbonates and subcarbonates pass into the urine without change in their condition; on which circumstance, all the future medical treatment of urinary calculi is founded. At last, M. D'Arcet found that the waters of Vichy had the same effect. M. C. Petit, in reference to whose three memoirs on this subject the Academy of Medicine have drawn up their report, proceeded as follows to experiment on these waters:—]

Having procured a certain number of calculi of different natures, the composition being ascertained by analysis, those calculi were sawn into two equal portions; one half was reserved as a point of comparison; the other was carefully weighed, and drawn, for the purpose of preserving its general ap-

appearance and its form; it was then placed in a little wicker basket, and immersed in the fountains of the "Grande Grille." Each basket was placed in a vase destined to receive the particles which might be detached from the calculus. The water was easily renewed; its temperature was 38 to 39 centigrade. The calculi were removed and dried; they were afterwards weighed and drawn.

[Then follows the result of 15 experiments, which we need not here relate: it will be sufficient to state that the loss varied from 12 per cent to 74 per cent.]

The waters of Vichy exercise, therefore, a double action upon urinary concretions. On the one hand, the bicarbonate of soda contained in the water, combined with the uric acid of the calculi, causes it to pass into the state of urate of soda, and thus determines the solution; on the other hand, the mucus, which calculi contain, is attacked by the alkaline salts of the mineral water, and the elements of the calculus, deprived of the cement by which they are agglutinated, fall apart in particles of various sizes.

It is in virtue of this disintegration that certain urinary concretions, insoluble or only sparingly soluble in alkalies, undergo a more prompt and more considerable diminution of volume than that which results from the solution of uric acid calculi.

[These facts had already been known and particularly explained by Chevallier. In all the experiments tried by M. Petit, the calculi were dry; having been taken from the human subject sometime previously, "the mucus entering into their composition was therefore less easily acted upon by the alkalies, and the dissolution or disaggregation must have been more difficult and slower than when the calculus is recently taken from the bladder."]

These facts are certainly of great importance; but we must be on our guard lest we attach to them too great weight. Because a calculus is dissolved in Vichy water, does it necessarily follow that it will be equally dissolved in urine—become alkaline by the use of this water? To make the experiment more conclusive a calculus should be dissolved in urine made alkaline. But we know how rapidly this fluid is changed after its excretion. Add to this that the quantity of urine contained in the bladder is smaller than the quantity of Vichy water used in

experiment by M. Petit, that the urine is not incessantly renewed, and we must admit that those circumstances must have a decided influence on the results, seeing that a current of water rapidly diminishes certain calculi.

Again, in most of the experiments, only fragments of calculi have been subjected to the action of Vichy water—a circumstance which would be favourable for their destruction. It is not, then, in facts of this kind that we should find a solution of this important question.

But if there be no certainty, there is unquestionable proof of the action of those waters upon calculi; these proofs are acquired by the change produced in urinary concretions passed by persons during the use of alkaline bicarbonates; by the diminution which many calculi have sustained, as shown by sounding, by direct inspection, by the presence of substances in solution, formed at the expense of new principles which the urine contains, and the elements of calculi with which they are combined: may I add, that the cessation of the symptoms of stone, in some patients, permits us to suppose that, in them, the destruction has been entire, and that there was only wanting to the demonstration the examination of the bladder.

[This report concludes with the following general conclusions.]

From the facts, reasonings, and experiments, exposed in this report, we draw the following conclusions:—

1st. Urinary concretions are acted upon by the urine, when it becomes alkaline, under the use of the thermal waters of Vichy, taken internally, or used in baths.

2d. It is not proved that urinary concretions of so considerable a size as to constitute true calculi have been entirely cured by those waters.

3d. This cure, however, is by no means impossible; indeed it presents great probabilities.

4th. The question can only be determined by direct experiment.

5th. The experiment may be made without danger.

Medical Gazette, Nov. 12, 1841, *pp.* 256, 264.

17.—USE OF ELATERIUM IN RENAL DROPSY.

By Dr. Clendinning, Physician to the Marylebone Infirmary.

[The case of dropsy here referred to, was probably owing to a morbid state of the blood, and a peculiar degeneration of the kidneys. The patient was admitted into the Marylebone Infirmary, Aug. 9th, 1841. His health had been greatly impaired by different causes. He was relieved by elaterium, and discharged in four or six weeks; but again relapsed, and was again relieved chiefly by the elaterium. Dr. Clendinning ends by the folloing remarks:]

The treatment of dropsical affections, such as that just described, is now, with most well-informed physicians, I believe, governed by two leading principles.

1. The first indication is the removal of the prominent symptom of such diseases, viz., serous effusion. To the presence of water in the cavities in preternatural quantities is popularly ascribed all the inconvenience, and is really due much of the mischief, of the dropsical state. 2. The second great indication is the removal of the humoral and glandular morbid conditions, on which we believe the dropsy in such cases to depend. There are, of course, various minor and incidental indications in these, as in all other grave diseases; such as correcting defective biliary secretions; securing sleep; relieving local distress by topical remedies, &c.; when any of such matters require attention. But the great ends to be had in view are, as already stated, 1. the stimulation of the absorbents of the serous cavities, and of the excreting vessels of one or more of those emunctories that give vent to the watery elements of the blood; and 2. the correction of the fibrinous state of the blood and congested condition of the viscera, but especially of the kidneys. Those two indications are, in a theoretical point of view, very different, but in their practical effectuation they closely correspond and nearly coincide. Both include amongst their means a limited diet and increased evacuations. The tendency of the agencies required for the accomplishment of either indication is therefore substantially, though in different degrees, one and the same. When happily applied, they alike, though not equally, relieve oppression, diminish serous plethora, and correct sanguification and excretion; and when unsuccess-

fully administered, they tend alike to extenuation and exhaustion. The means employed in the preceding case for the accomplishment of those two leading indications, may, for the reasons just assigned, be considered together.

They were diuretics, bleeding from the arm, elaterium, with restricted diet. The diuretics employed were amongst the most successful in our Pharmacopœia, viz., juniper infusion, with nitrous æther squill, tincture, and acetate of potass. Finding, after forty-eight hours use of diuretics with regulated diet, that no change of the renal secretion had been obtained, and that the pulse continued hard and full, I ordered half-a-pound of blood to be taken from the arm, and the diuretics to be continued. After this, improvement was soon observed in the pulse, general feelings, and quantity of urine, but the albuminous condition continued. A month elapsed under this plan, during which he continued better; but he had still some effusion in the abdomen, and albumen in the urine: I then added elaterium to his diuretics. Under this medication he continued for nearly a second month with advantage, but the ascites and albuminuria had not wholly disappeared at the end of that period. Increase of the elaterium had now become needful (from $\frac{1}{12}$ to $\frac{1}{6}$ of a grain twice or thrice daily). Under this last modification of the treatment he still continues, with this difference, that he has for some time not taken quite one pill ($\frac{1}{6}$ gr. elat.) per diem, instead of two or three as at first: with the single pill he has about three evacuations, and no more daily, and urine, he says, in sufficient quantity; and for more than a month no albumen has been detected.

Remarks.—Now unquestionably, the principal remedy in this case has been the elaterium. The bleeding was beneficial, and the diuretics had some effect; but the removal of the serum from the abdomen, and albumen from the urine, may fairly be attributed to the hydragogue principally. The mode of administering the elaterium adopted, is that which has been in use with me for some years. By exhibiting the medicine in minute doses at intervals through the day, we can generally procure discharges of aqueous matters, by stool, as copious as we can require; and very commonly the kidneys participate in the unusual activity of the bowels, and large evacuations of urine are likewise obtained. When the elaterium agrees well, we may, I think, confidently reckon on

clearing away the serous accumulations in a moderate time by its means; and in a large proportion of cases (I should say a large majority) of general dropsy, the stomach and bowels can bear it well enough. By the persevering use of the drug in small doses, with or without correctives, as hyoscyamus, &c., habit soon comes to our aid to reconcile the stomach to it, either completely, or at least so far that it does not derange materially the digestion: and a constant flux is maintained, which soon exhausts the serous effusions. One rule I generally observe in the use of elaterium, and I attach considerable importance to it, viz., to secure sleep, by opium, if necessary. So that between each day of purgation, &c., shall be interposed a night of sufficient, and, if necessary, artificially induced comfort and refreshment. With this view the elaterium is begun early, and continued at short intervals until purging supervene, when it is suspended for that day to be resumed next morning. The use of opium at night has considerable effect in procuring tolerance for the drug in cases in which it could not otherwise be conveniently employed. For this case, however, opium was not required. His rest was not injuriously disturbed, owing apparently to the operation of the elaterium being over usually each day before bed-time. Other auxiliaries to the hydragogue plan are the use of a diet as sustaining as the pulse and other symptoms may be found to admit, and clothing as warm as the patient can conveniently wear, with woollen clothing next the skin. These were both employed in this case with their usual good effect.

Medical Gazette, Dec. 3, 1841, *p.* 374.

18.—ON OPIUM SMOKING, AS A REMEDIAL AGENT.

By Dr. James Johnson.

[An interesting paper on the opium smoking in China, has been published by G. H. Smith, Esq., surgeon, in Penang, and communicated to Dr. Johnson, who makes the following remarks on the subject.]

First, I think it will be admitted that the Chinese mode of taking opium by smoking or inhalation, induces the peculiar sedative effects of that drug more powerfully and more speedily than when taken into the stomach.

Second, There can, I believe, be little doubt, that these effects are produced chiefly, if not entirely through the medium of the nervous system, and not by digestion, absorption, and the circulation.

Third, It does not appear that the casual or temporary smoking of opium is more dangerous or injurious to the constitution than that of swallowing the drug, whether in substance or solution. On the contrary, I believe it is less so, and not so likely to impair the functions of the stomach, liver, and bowels, as when directly applied to the digestive apparatus.

Fourth, The *habitual abuse* of a drug, by which, in fact, it is converted into a poison, is no argument or reason against its occasional exhibition as a remedial agent.

Fifth. If the above observations be admitted as rational, I see no reason why we should not employ the Chinese mode of inhaling the fumes of opium, in certain dangerous and painful maladies where the common mode is found to be inefficient, and attended with great derangement of the digestive organs. It is clear that we can very seldom induce that profound sleep and insensibility to all mental misery and corporeal pain, by opium taken into the stomach, which we find to be produced by the inhalation of its fumes acting directly on the brain, through the medium of the nerves. Might not the Chinese mode, then, be adopted in tetanus, hydrophobia, tic-douloureux (especially of the facial nerves), violent spasms, and painful diseases that defy the power of opium taken in the common way?

The various preparations of opium might be easily smoked by means of a common pipe, and the powerful effects induced in a very short space of time, without the possibility of their being rejected by the stomach, or prevented from acting energetically on the sensorium, and throughout the whole nervous system.

Medico-Chirurgical Review, April 1842, *p.* 586.

19.—" CLINKERS", A NEW FORM OF ADMINISTERING IRON.

By Conway J. Edwards, Esq., M.R.C.S., Batheaston, Bath.

[When we find this remedy sanctioned by Dr. Watson, of Bath, we think its merits as a tonic worthy of trial; although

we confess that it is with some diffidence that we admit it into our pages.]

"Clinkers" is the refuse of the blacksmith's forge, and differs from common ashes and coke in its greater specific gravity, component parts, and external appearance. As a medicine in cachectic disorders, particularly those of females, it has been used for many years, by "knowing old women" in certain manufacturing districts; and the success which attends its exhibition, particularly in chlorotic disorders, is such as to have won for it the title of "specific."

The following is the formula for its preparation:—The bluest and heaviest clinker, being selected from a mass, is reduced to an impalpable powder (a work of no small difficulty, on account of its metalloid nature). Any quantity of this powder may be mixed, with a sufficiency of treacle, to form a stiff paste; and to every eight ounces of the mass half an ounce of magnesia, and the like quantity of ginger must be added. Thus formed it is any thing but inviting to the eye; but this can be remedied by using honey in lieu of treacle, and adding half a drachm of the peroxide of iron to the compound.

The directions which accompanied the formula were as unique as the formula itself. It must be taken three successive days and nights (twice a day), for three days; omitted for a like period, and so continued until the course which has been decided upon should be finished. The dose is a teaspoonful. Absurd as these directions seem, they are not so ridiculous as they appear, for experience has demonstrated that constitutional irritation supervenes, unless some decided interval is allowed at stated periods during a course of this remedy.

The first time I heard of this medicine was, after it had effected a happy change in the constitution of a young lady, who had been suffering from some internal but obscure disorder, for several years. The circulation, through the minute ramifications of the blood vessels, was reduced to its lowest ebb, while the fluid which circulated in the larger channels was a turbid brown, instead of the rich colour for which blood is remarkable. Under such a state of things, the exsanguineous appearance of the skin may be readily conceived. She had been under the professional care of two medical men before I was consulted, and, when called in, found her suffering from all those symptoms of debility, which characterise uterine and

ovarian disturbance. From some remarkable symptoms, I was led to fix the seat of the disease in the ovaries. During my attendance I tried every medicine, and combination of medicines, which bore upon the case; but no permanent benefit resulted from any of them: the only preparations which produced a tolerable effect were those of iron, and among them none possessed such power as the ioduret. The constitution became evidently impaired; the feet swelled; there was distention; and disorganisation appeared to be making rapid advances. A very distinguished physician was called in, but could give no opinion on the nature of the case. He attended for several weeks with no success; during this gentleman's attendance, most agonising pains in the head came on; they were neuralgic; for the relief of these, a veratrine ointment was applied; then veratrine, delphia, and morphine, suspended in oil; æther and ammonia were rubbed in: all these failed. I then proposed passing an electric current through the affected part, to which assent was given, but with a similar result. Le Fai's ointment was advised by some friend, and, I must certainly admit, with partial success. I never witnessed sufferings so acute—so continued. Another eminent physician was now consulted. "We must," he said, "build up the constitution; it will be a work of time, but it must be done." And a work of time it might have been, for after a considerable attendance no radical good was effected. Still, the principle on which this gentleman acted was sound, and although, as regarded the original affection, things had not improved, there was no retrograde movement, and possibly there might have been an important and visible advance, had the attendance extended over three or four years. Brighton was resorted to, and failed; the Isle of Wight, Clevedon, and several other maritime places, tried; but in vain. Medicine, diet, and change of air, were alike unavailing. Dr. Watson, of Bath, was called in, but no decided opinion could be pronounced, and, consequently, no very decided plan of treatment adopted. The case seemed hopeless, when a young lady, whose sufferings had been similar to those of this patient, and whose case had baffled the skill of her professional advisers, recommended her to have recourse to the remedy which had restored her to health; a large number of cases were also adduced in favour of its efficacy. The offer was eagerly embraced, and, Dr.

Watson's consent being obtained, the trial of "the clinker" commenced.

The result exceeded all expectations. In two months the feet ceased to swell; the tumidity of the hypogastric and umbilical regions subsided; the functions of the stomach were restored; the small wiry pulse of above 100 was converted into a healthy beat of 80; the neuralgic pains ceased; and, what was most extraordinary and pleasing, the capillary circulation became so improved, that the skin assumed a vital hue, and the cheeks denoted returning health; every morbid symptom disappeared, except an excess of uterine secretion. The happy change surprised the professional attendants, as well as the patient's friends and relations, and, without being at all enthusiastic in praise of the "clinker," it may be fairly admitted that the beneficial results in this interesting case were owing to its medicinal properties.

Its success here made me anxious to test its powers further; and the lady having been so obliging as to give me the formula for its preparation, several patients were collected in whom the exsanguineous state of the skin, and wasting of the muscular fibre, were indicative of the morbid manner in which the functions of the stomach, alimentary canal, and uterus were carried on. Within a month from commencing the use of the clinker, a striking improvement took place in the appearance of the patients, and before the termination of two months every unfavourable symptom disappeared. One case, in particular, is well worthy of especial notice, by reason of the scrofulous condition of the submaxillary glands, and the ulcerated state in which one of them had been for several years, and which healed during the course of the new medicine.

Provincial Medical and Surgical Journal, Feb. 5, 1842, p. 372.

20.—NEW RESEARCHES ON DIABETES MELLITUS.

By M. A. Bouchardat.

[Some time ago, M. Bouchardat published a memoir in which he attempted to show, that the existence of saccharine urine in diabetes mellitus has some remarkable connection with the ingestion of feculent aliment, such as common bread, &c. In his treatment of such cases, therefore, he strongly insists on the

almost total abstinence on the part of the patient, of all such articles of diet. The patient must, in the first place, abstain voluntarily and continuously, from the use of common bread. He says that two objects are to be principally kept in view in the treatment; viz.]

1st. To discover an aliment which would replace bread without producing its ill effects in diabetes.

2d. To restore the economy to its natural condition, profiting by the interesting experiments of the commission on gelatine, respecting the essentially nutritious properties of gluten. It immediately occurred to me (says M. Bouchardat), to prepare with this substance, an aliment which might be used in lieu of bread. The difficulty of preparing gluten for daily use was an obstacle in the way, but it occurred to me that the Société d'Encouragement had granted a prize to M. E. Martin for having isolated gluten during the preparation of starch. I therefore applied to this eminent manufacturer, who zealously entered into my views, but notwithstanding all his efforts, it was always necessary to add a fifth part of fecula to obtain a light bread, and of an agreeable taste. This result, though not perfect, is yet a great improvement, for two hundred grammes of this bread, with a sufficient allowance of flesh meat, would constitute a sufficient diet, and a quantity of fecula ingested daily, would amount to but fifty-five grammes.

The question of restoring the economy to its natural condition was a much more difficult one, for its solution required either one of those happy inspirations which are so rare, or an exact knowledge of the nature of the disease. In this case such a knowledge would suffice, as diabetes is not a malady connected with irreparable structural lesions; no organ essential to life is primitively affected. It is an aberration, but a rebellious aberration of the functions. Organic lesions, as pulmonary tubercles, for example, are secondary. The primitive affection should be curable, and if it has not been so hitherto, the reason is that the true cause of the disease has escaped our investigation.

The following were the considerations which guided me. The acid secretion of the skin is suddenly and completely interrupted in diabetes; and here is one decided cause of disturbance; the secretions of the mucous membrane, and of the glands of the digestive organs are altered in their chemical composition; as a consequence of this suppression of the cuta-

neous exhalation, they become almost completely acid in lieu of being alkaline.

Can we thence conclude that the superabundant acids in the digestive organs react on the fecula and change it into sugar? Certainly not, for I have long since ascertained that mineral or organic acids have no influence in converting fecula into sugar at the temperature at which digestion is effected. We must, however, bear in mind, that whenever the organic acids exist in considerable quantity, we simultaneously encounter that modification of albumen which acts in converting fecula into sugar; this occurs in the ripening of fruits. The same coincidence probably occurs in diabetes, and the origin of the disease is the suppression of perspiration, and the perversion of the secretions of the mucous membrane, and glands of the digestive organs.

If this hypothesis be admitted, and observation and experience have clearly proved to me the reality of this perversion of secretion, the rational indication of treatment should be directed towards re-establishing the functions of the skin. I know that many fruitless attempts have been made in this direction. Thus, vapour baths have been recommended by Oribasius, Bardsley, and many others, but I have never seen any evident benefit follow their use. The same is true with respect to sulphur baths, the hydro-sulphuret of ammonia, &c.

The means which have seemed to me most effectual in restoring the functions of the skin, are, 1st. Woollen clothing, in quantity sufficient to keep up constant diaphoresis. 2d. The internal administration of ammonia and opium.

[Some cases are related, of which, the following is one.]

M. A., in the vigour of life, for about six months has suffered from extreme thirst, has passed much urine, and has sustained a daily diminution of flesh, strength, and energy. His sight has also deteriorated rapidly.

16th of August, he lived as usual, consuming daily about 500 grammes of bread. Passed about three litres of saccharine urine, dark coloured, of the odour of whey, of sp. gr. 1·032, rotatory power 7, the length of the tube being 313. It was thence concluded that the urine contained about 52 grammes of sugar per pint, and that the total amount of that principle passed in 24 hours, was about 168 grammes.

The treatment consisted in—1. Replacing ordinary bread by that prepared from gluten—2. Wearing a complete suit of new flannel—3. The use of a mixture containing 17 grammes of carbonate of ammonia, 20 grammes of rue, 20 grammes of syrup, and 100 grammes of water. In the evening a bolus of 2 grammes of theriacum, and 25 milligrammes of opium was administered. These means caused abundant perspiration, which had been long suppressed; the thirst diminished as did also the quantity of urine.

This regimen was continued till the 18th, on which day the urine being examined was found acid, more highly coloured, and of a natural taste and smell; the quantity passed was somewhat above a pint, sp. gr. 1·010. Rotatory power, 0. No trace of sugar.

The regimen above mentioned, was continued, only that the gluten bread was suspended and the use of common bread resumed. On the 21st, the urine was examined. Odour and colour natural—quantity as before, but the sp. gr., was 1·028—Rotatory Power 5·5 the length of the tube being 309. The quantity of sugar then is about 40 gr. per litre, but the total passed in 24 hours is only about 62 gr.

Notwithstanding the re-appearance of sugar in the urine, the use of ordinary bread was persevered in, the clothing, however, was made still warmer, and the dose of carbonate of ammonia and of opium was doubled.

25th August, the urine was again examined. Rotatory power, 0. Sp. gr. 1·020. Quantity, characters, and composition natural.

27th. Characters of the urine unaltered. Sp. gr. 1·018. The diabetes is cured. Ten days treatment have sufficed to re-establish the functions of the skin, to restore the strength and energy, and what is very remarkable, vision is now as strong as ever.

[M. Bouchardat concludes his paper by saying:—]

At first sight it might seem that these four patients were all submitted to identical influences. They were all treated with gluten bread, and preparations of ammonia and opium, and yet the urine resumed its natural composition in the two last cases alone. The cause of this difference is, that flannel clothing was not employed in the two first cases, while it was

employed in the two latter cases. The urine of the two first patients became alkaline under the influence of carbonate of ammonia, that salt was eliminated by the urine, and exerted no diaphoretic effect. In the two last cases the function of the skin was stimulated by the use of flannel, and the carbonate of ammonia did not pass into the urine, which remained constantly acid. When sugar re-appeared in the urine of M. A., additional flannel clothing was directed, so as to keep up constant diaphoresis and the case terminated successfully.*

Dublin Medical Press, Dec. 8, 1841, *p.* 355.

21.—LEECHES TO THE KNEE IN DYSMENORRHŒA.

By M. Trousseau.

In three hospital patients under the care of M. Trousseau the catamenia have followed the application of a leech to the internal surface of the knee. In one case a leech was applied to the right knee; while it held on, the patient experienced nothing particular, but as soon as it fell off, pains in the loins came on, which lasted almost an hour, and the discharge then appeared. The next day it was arrested again, and a leech was applied to the left knee; and the discharge appeared as before, and continued as usual during three days. In another case the pains of uterine congestion commenced with the application of the leech, which adhered during an hour. The effect produced by one leech is not wonderful, says M. Trousseau, because if the bleeding is allowed to continue, as large a quantity of blood flows as the ordinary amount of menstrual discharge.

British and Foreign Medical Review, Jan. 1842, *p.* 236.

22.—NITRATE OF SILVER IN GASTRIC AFFECTIONS.

By Robert Dick, M.D.

[A good case of this kind is related by Dr. Dick, in which this remedy was useful.]

A young gentleman had stomach ailments almost from infancy. The most distressing symptom, however, was eructation of an acid and burning fluid and gas from the stomach,

* In article No. 29, will be found an interesting paper on the same subject by Dr. George Budd, in which a somewhat different theory to this advocated by M. Bouchardat is advanced.

which often commenced even during meals, and continued for hours afterwards. Yet his bowels were regular, urine natural, and the functions of the skin normal, with sound sleep—and no apparent disorder or disease of any other organ in the body.

The case of this young gentleman appearing to me to betray a union of morbid secretions and morbid sensibility, I commenced the treatment with small doses of blue pill and ipecacuanha, from which no immediate benefit appeared to result. I then put him upon a month's course of nitrate of silver, with a view to allay the morbid sensibility of the mucous membrane. The effect in this, as in almost every other case in which I have tried it, was surprising and gratifying in the extreme. This patient, in common with many others who had taken this medicine, warmly expressed the great relief from irritation, flatulence, cutaneous chillness, discomfort, which it promptly procured them. This gentleman assured me that he had not felt himself so much in possession of the *sensation* of health, so far back as his memory could carry him, as he did since he began to use the medicine in question. I have once or twice laid it aside from fears of its discolorizing property; but, after a while, returned to it, and always with augmented benefit. And this young man who, when he came to me, did not dare to go into company, partly from the depression of his spirits, partly from his well-founded terror of being led into dietetic excess, partly from the disastrous effects which the moral excitement of society ever had on his enfeebled and irritable nervous system; who, when I first saw him, was plunged into the deepest despondency and despair, is now cheerful and confident,—mingles freely in society, and looks and feels like one in excellent health.

Medico-Chirurgical Review, Jan. 1842, *p.* 65.

23.—ON NARCOTISM IN NEURALGIC DISEASES.

By M. Levrat.

M. Levrat relates the history of several cases of obstinate neuralgic affections, which had resisted a long and varied treatment, but at length yielded, and rapidly too, to the use of narcotics, carried the length of producing narcotism. He thinks the practice is perfectly safe in the hands of a careful

and intelligent physician. One or two cases will suffice to illustrate his practice.

1. A sister of charity at Lyons, from the fatigues of her service, had become affected with severe sciatica; the limb wasted away, and had lost a third of its volume. All the usual means failed. Opium was then given so as to induce narcotism, when almost immediately the pain ceased, and, by the end of a month, the same treatment had completely removed the affection.

2. Madame Faure, sixty-two years of age, had suffered with sciatica for three years. Three grains of opium were required to produce narcotism; and she recovered in about the same time as the above case.

3. M. Moretti suffered many years from sciatica of the left limb, which was much atrophied. All remedies had failed to relieve the excruciating pain. Two grains of extract of opium produced poisonous symptoms with narcotism, vertigo, nausea, &c., requiring bleeding and other remedies. When he recovered, his malady was gone, and two years afterwards he was still well.

4. A woman, forty-two years of age, was afflicted for many years with nervous asthma; she recovered from the first day she took a pill composed of extract of opium, and extract of belladonna.

Edinburgh Medical and Surgical Journal, Jan., 1842, *p.* 255.

24.—ON COFFEE AS AN ANTIDOTE IN POISONING BY MORPHIA.

By Dr. B. Fosgate.

To relieve himself of a severe attack of toothache, Dr. Fosgate swallowed in solution one and a quarter grain of the sulphate of morphia, equal to about seven and a half grains of solid opium. In about half an hour, a sensation of thickening and rigidity of the muscles of the back of the neck came on, and gradually extended itself to all the flexors of the limbs. In about five hours severe nausea succeeded, accompanied by efforts to vomit. Tea and sour cider increased the efforts to vomit so much that the stomach rejected fluids the moment they reached it, so that a second mouthful could not be swallowed before the first was ejected. Prostration of strength and

apathy, with full slow pulse, and pricking sensation of the skin, were added to the other symptoms which were continually increasing in severity, when coffee was proposed. One gill of cold strong infusion of coffee was swallowed, and was retained about five minutes; the distressing symptoms, however, were by it abated, the nausea in part subsided, as was also the sensation of rigidity of the muscles; and the occasional repetition of this simple remedy during the course of the night completely removed all the distressing symptoms. Dr. Fosgate states, that, whilst suffering from the severe nausea, but previous to the exhibition of the coffee, his mind was depressed, and he felt considerable anxiety, no pleasurable sensations or reveries having been felt. But after the draughts of coffee, the depression of mind and all anxiety vanished, and there succeeded that exquisite revelling of the imagination so much sought after by the opium eater. This state continued for five or six hours, and was succeeded by sound sleep, on awaking from which he experienced a few hours of lassitude. The morphia had been taken after eighteen hours fasting.

Edinburgh Medical and Surgical Journal, Jan., 1842, *p.* 259.

25.—ON THE PRACTICE OF ELECTRO-PUNCTURE.

By Dr. Dunglison, Professor of the Institutes of Medicine and Materia Medica, Philadelphia.

This consists in a union of acupuncturation with electricity. The idea of the conjunction appears to have originated with Berlioz; but Sarlandière was doubtless the first who put it in practice, although J. Cloquet has contested the priority with him—a matter, by the way, as in all such cases, of extremely small moment. The operation consists in employing acupuncturation in the usual way, either with a single needle, or with two or more, and making a cummunication between them and the prime conductor of an electrical machine; or they may be made to form part of the circuit in the discharge of a Leyden jar. In this way, the electrical influence may be graduated from the simple aura to a full shock. Sarlandière appears to have employed electropuncture with great success; but he restricts its use to rheumatic or neuralgic pains, uncomplicated with organic mischief or inflammation; when such complica-

tions exist, he advises blood-letting and general antiphlogistics to be premised.

Guersent thinks it better, in all these cases, to use simple acupuncturation, and only to employ electropuncture, when the first proves to be inadequate, as in paralysis, and in tremors produced by the immoderate use of mercury; in all cases, indeed, in which the malady depends on a diminution of the nervous energy. A case of success from its use, in paralysis of the right arm, in which voluntary motion and sensibility were destroyed, has been published. *(Lancette Française, Dec.* 20, 1836.)...

Magendie affirms, that he has treated many cases of incomplete amaurosis with great success by this agency. He employed it, however, in the form of what has been more properly termed galvanopuncture,—by fixing a needle in the frontal nerve, and another in the superior maxillary, and making these communicate respectively with the poles of a galvanic pile of twelve pairs of plates, each six inches square. Whenever the contact was made, the patient experienced a painful commotion in the course of the nerves, and at the bottom of the orbit; the light became better appreciated, and the pupil contracted....

M. Leroy d'Etioles has suggested galvanopuncture, in cases of asphyxia, in a manner which, at the first aspect, appears most formidable; but which is really less so then it seems to be, in consequence of the impunity with which fine needles can be made to penetrate, as we have seen, even the most important organs. He introduced an acupuncture needle on each side between the eighth and ninth ribs, until it reached the fibres of the diaphragm. He then established a galvanic current between the needles, by means of a pile of twenty-five or thirty pairs of plates, an inch in diameter. The diaphragm immediately contracted, and an inspiration was accomplished. He then interrupted the circle, when the diaphragm, urged by the weight of the abdominal viscera, and aided by gentle pressure made on the abdomen by the hand, returned to its former position, and an expiration was effected. In this way, the two respiratory acts were made to succeed each other, and regular respiration was reinduced. A continuous current was likewise employed in some cases, but the respiratory movements were irregular, and nothing like natural respiration resulted.

Leroy tried his method on animals asphyxied by submersion,

and when they had not been under water more than five minutes, they were often restored.

These experiments were witnessed by Magendie. On different occasions, M. Leroy asphyxied animals of the same kind, and apparently of the same strength, and whilst those that were left to themselves perished, those that were treated by galvanism recovered.

As an aid, therefore, to pulmonary insufflation, and an important one, galvanism, combined or not with acupuncturation, might be advantageously employed in asphyxia, but as has been already remarked, it can rarely be available. Certainly no time should be lost in adopting the other energetic and indispensable measures that are demanded. It has been recommended, that as only a very small apparatus is necessary, batteries, consisting of a few plates, might be kept wherever there are station-houses for the reception of persons in a state of asphyxia. The suggestion is good; and they might also with propriety form a part of the cabinet of apparatus of the private practitioner; but whilst an assistant is preparing an apparatus for action, the practitioner should be assiduously engaged in applying other means of resuscitation.

London and Edin. Monthly Journal of Med. Science, Jan. 1842, *p.* 49.

[The same author makes the following remarks on *Mustard-seed Oil.*]

Mustard-seed oil may be applied either externally or internally. For the first object, Dr. Meyer advises a solution in rectified spirit (twenty-four drops to the ounce), or in oil of almonds (five or six drops to the drachm of oil of almonds.) In Berlin, the first of these is used. Even this solution exhales so strongly the characteristic odour of the mustard, that simply smelling it induces a sense of pungency in the nose, as well as tears in the eyes. Owing to the great volatility of this oil, its properties and efficacy are soon lost; and the strength of the spirituous solution becomes less and less, when the fluid is preserved for a long time in vessels that are not accurately closed, or are frequently opened for the administration of the remedy, and afterwards not carefully attended to. It is therefore advisable in practice, that only small quantities should be prescribed at a time, and that these should be kept in well-closed vials, and in a cool place.

The mode of external administration may be one of two, according to the sensibility of the skin, and the effect it may be desirable to induce. It may consist either in rubbing the liquid on a part of the surface, or in applying strips of linen wetted with the solution. The first method is advisable where the skin is delicate, as in the case of women and children, and in those whose healthy sensibility has not been diminished, as by paralytic affections. The fluid, when rubbed on the skin, very quickly evaporates, in the course of a few minutes, and excites a vivid sensation of burning, with bright redness of the surface, which disappears in the course of a few hours at the farthest.

The augmented sensibility produced by friction with the solution of the oil, continues generally for a longer period; and, consequently, if a fresh application be needed at a short interval—say in from four to six hours—it must be made on the neighbouring parts, avoiding those first implicated. It is sufficient to use the remedy in this manner two or three times a-day.

The application of the oil by means of strips of linen, is adapted for skins such as those of men, which are thicker, and less sensible, as well as for morbid cases in which the healthy sensibility has been depressed. The size and shape of the strips must be determined by circumstances. The linen is dipped in the solution, placed upon the prescribed portion of the skin, and suffered to dry, which generally happens in about eight minutes. Burning pain immediately succeeds the application, and is often so insupportable, that the patients object to wait until the linen is dry, and it has to be removed earlier. Besides the more violent pain produced by this mode of applying the oil, the redness of the skin is much greater, and in many cases vesication succeeds.

Ibid, p. 51.

26.—ON LARGE DOSES OF QUINIA IN INTERMITTING FEVER.

By Austin Flint, M.D., of Buffalo, New York.

[In article 112, and page 219, of our fourth number, Dr. Allan is related to have produced the most decided effects on intermittent fever, at Port Lewis, by large doses of the Sulphate of Quinine, twenty or twenty-five grains at once; and in another

part of the world we find another practitioner pursuing the same practice with similar success. And although this mode of treatment is not particularly new, Dr. Elliotson strongly recommending it, we believe it is not so generally adopted as it ought to be. Dr. Flint pursues this practice without any preliminary treatment,]

Commencing with five grains, and repeating it in twenty or thirty minutes, the amount was increased until twenty, thirty, and in one case, even forty grains was administered within half an hour. After satisfying myself not only of the safety, but, in many cases, the superiority of this plan of treatment, my usual course was to prescribe eight, ten, or fifteen grains, and if no unpleasant results followed, repeating it in from twenty to sixty minutes, whenever doubt was entertained concerning the ability of the patient to bear the whole quantity which I wished to administer during the apyrexia. But experience having shown that no inconvenience of any moment followed the exhibition of twenty or thirty grains within a short space of time, I was afterwards in the habit, in the majority of cases, especially when the patients were not retained in hospital, of prescribing, at once, these quantities.

Analysis of thirty-three cases occurring at Poinsett Barracks treated with sulphate of quinia in large doses.—Three only of these cases were primary attacks. In eleven cases the disease had occurred only once previously. Of these, in one instance, the first attack preceded by four years; in one, six years; in all the others a few weeks or months only had intervened. In seven cases the disease had occurred twice previously. Of these, the first preceded the third two years, in one case; eight, in one case; and in all the others the two previous attacks were of recent date. In ten cases the disease had been of long date, and had recurred numerous times. In two cases no record was made of the previous history.

Of the Type.—Twelve of the cases were of the tertian type; thirteen were of the quotidian type. In eight the type was not definitely known, the disease being checked after a single paroxysm. This latter circumstance could hardly have occurred excepting at a military station, where application for relief is almost invariably made on the first access of disease.

Complications.—Thirteen of the cases were complicated with catarrh; one with diarrhœa; one with otitis. In seven, the

pulse in apyrexia is recorded accelerated; in four, the tongue coated; in five, the tongue furred; in seven, anorexia is recorded; in eleven, lassitude; in five, cephalalgia. In two cases pain in the chest on full inspiration existed; in one of these sulphate of quinia, ten grains, in conjunction with a sinapism, was prescribed, and the next day this complication was relieved; in the other the quinia alone was prescribed, and the patient was returned for duty on the fifth day.

As the details of these cases were not made with any view to this analysis, it is probable that the minor complications, or more properly, symptoms, such as the state of the tongue, appetite, &c., were not always recorded when the morbid deviations existed in a mild degree.

1. Of the doses of medicine exhibited on the first day after being received on the sick report, and the character of the disease determined.—Five grains repeated in 20 minutes in one case; five grains repeated in 30 minutes in one case; ten grains repeated in 30 minutes in one case; ten grains repeated in 4 hours in one case; five grains morning, noon, and evening in three cases; eight grains, morning, noon, and evening in one case; five grains morning, noon, and evening in one case; twenty grains morning, noon, and evening in nine cases; twenty-five grains morning, noon, and evening in five cases; fifteen grains morning, noon, and evening in four cases; forty grains morning, noon, and evening, one case. Number of cases 28.

2. On the second day.—Ten grains repeated in 30 minutes in one case; ten grains repeated in 2 hours in one case; ten grains repeated in 1 hour in one case; eight grains repeated in 1 hour in two cases; twelve grains repeated in 1 hour in one case; ten grains repeated in 1 hour in one case; twenty grains repeated in 1 hour in four cases, fifteen grains repeated in 1 hour in eight cases. Number of cases 19.

3. On the third day.—Ten grains repeated in 30 minutes in one case; ten grains repeated in 4 hours in one case; five grains morning, noon, and evening in three cases; fifteen grains, and in 4 hours ten grains in one case; ten grains repeated in 4 hours in one case; ten grains repeated in 2 hours in one case; ten grains repeated in 2 hours in four cases; twenty grains repeated in 2 hours in seven cases; fifteen grains repeated in 2 hours in three cases; twenty-five grains repeated

in 2 hours in one case; eight grains repeated in 2 hours in one case. Number of cases 23.

4. On the fourth day.—Eight grains morning, noon, and evening in two cases; eight grains morning, noon, and evening in one case; ten grains morning, noon, and evening in four cases; fifteen grains morning, noon, and evening in three cases; twenty grains morning, noon, and evening in two cases. Number of cases 12.

5. On the fifth day.—Eight grains morning, noon, and evening in one case; fifteen grains morning, noon, and evening in two cases; twenty grains morning, noon, and evening in two cases; twenty-five grains morning, noon, and evening in two cases; ten grains morning, noon, and evening in three cases.

6. On the sixth day.—Eight grains morning, noon, and evening in one case; fifteen grains repeated in 30 minutes in one case; ten grains repeated in 30 minutes in two cases; twenty grains repeated in 30 minutes in two cases; five grains repeated in 30 minutes in one case. Number of cases 7.

7. On the seventh day.—Ten grains repeated in 30 minutes in one case; twenty grains repeated in 30 minutes in one case; five grains morning, noon, and evening in one case. Number of cases 3.

The quantity of quinia thus administered to the patients collectively, amounts to 1684 grains. The mean quantity administered to the patients severally, will therefore be $51\frac{1}{3}$ grains. The maximum quantity administered to any patient is 103 grains. The minimum quantity 10 grains.

Of the immediate effects of the medicine.—No unpleasant effects worthy of record followed the administration in nineteen cases. Nausea occurred, apparently in consequence, in four cases; vomiting in one case; headache in four cases: temporary deafness in four cases; giddiness, or dizziness, in nine cases; buzzing, or ringing in the ears, in eight cases.

Effects upon the paroxysms.—In nine cases no paroxysm occurred after the first day of the administration of the specific; in eleven cases one subsequent paroxysm only occurred; in five cases two only occurred; in one case three occurred; in one four occurred, the last of which is recorded extremely light; in no case was the treatment unsuccessful.

Of the time of remaining on the sick report.—In three cases

the date of return to duty is not recorded. Of the remaining thirty the average period of continuance on the sick report is a trifle more than $5\frac{1}{2}$ days. The minimum period of any particular case is 3 days. The maximum period is eleven days.

[The general excitant effects of the quinia are said to be usually almost imperceptible. There are cases, however, in which it would be inadmissible, on account of the inflammatory state of the gastric mucous membrane, in which it would be well to administer the drug as an enema, as recommended by Dr. Elliotson.]

American Journal of Medical Science, Oct., 1841, *p.* 278.

27.—INFANTILE CONVULSIONS TREATED BY ICE TO THE SPINE.

By R. B. Todd, M.D., F.R.S., Professor of Anatomy and Physiology, King's College, &c.

[We need not remind the practitioner how necessary it is to keep in view correct principles in the treatment of convulsions, which are *symptoms* of disease, and not the disease itself. It is particularly necessary to ascertain their cause. Convulsions cannot occur without some affection of the medulla oblongata, or spinal cord, direct or indirect. The irritation or disease may be either in the brain itself or in some remote part, as in the gums from teething, or in the bowels from a variety of causes. The child which gave rise to the following observations of Dr. Todd, was convulsed before admission into the hospital. When admitted, the following were the symptoms:]

Total absence of consciousness; powerful convulsive twitchings of the flexor muscles of the right side, and also of the muscles of the face on the same side; internal squinting; pupils natural; respiration heaving and difficult; deglutition impossible; action of the heart very rapid. Such were the symptoms, they were symptoms of irritation, and the first inquiry of the medical man should be, What is the source of the irritation?

[The convulsions continued in spite of the usual treatment. The gums were freely lanced: the warm bath, a turpentine enema, cold to the head, leeches, &c., were in vain tried. Mr. Pincott, the resident assistant, then suggested the application of ice to the back of the neck and spine, "with the view of

calming, by the sedative agency of cold, the irritable state of that portion of the cerebro-spinal axis which he rightly judged to be affected, the medulla oblongata and spinalis." The happiest results followed.]

Ice was applied in an ox-gullet along the course of the spine, extending from the occiput to the sacrum. Immediately on its application the breathing became easier, the child sighed several times, the pulse fell rapidly, and in ten minutes the convulsions had entirely ceased. Consciousness was not immediately restored, but as soon as the convulsions were over, the child fell into a sound sleep. Next morning the child was quite conscious, but irritable; he was freely purged with a little calomel and jalap, and left the hospital quite well on the fourth day from his admission.

The result of this case was highly satisfactory, as affording a clear example of the good effects resulting from the sedative influence of cold. He would, however, impress upon them that an application thus made to the region of the irritated nervous centre was less likely to be useful, if the original irritant was not removed or diminished; and, therefore, it would not have been good practice to have applied the ice, unless the gums had been previously freely scarified, and means used to clear out the bowels.

Lancet, April 30, 1842, *p.* 146.

28.—ON DIFFERENT PREPARATIONS OF IRON.

By Wm. Tyson, Esq., Ashbourne, Derbyshire.

The most valuable preparations of iron are those which have the deutoxide for their base, as in the mineral waters, and in the formula I am about to give you:

LIQUOR OXYSULPHATIS FERRI.

℞ Ferri sulphat, ʒij. (or ʒiij.); Acidi Nitrici, ʒiij.; Aquæ Dist., ℥iss.

Tere diligentèr per horæ quadrantem acidum nitricum ferro vitriolato, dein sensim addendo aquam, per chartem cola, et fiant guttæ, é quibus capiat æger gtt. v—xij bis in dies ex infuso quassiæ vel aquâ.

This form, I believe, was invented by Sylvester, about forty years ago, and has ever since that time been in constant use

among the practitioners of Derbyshire. I wonder it has not been inserted into the Pharmacopœia, as it is by far the best and most powerful of all the preparations of iron. The oxygen of the nitric acid uniting with the sulphate of iron, forms a persulphate; at the same time the iron is converted into red oxide. As a medicine it far surpasses the tinc. ferri mur., and it never precipitates the oxide of iron. It is one of the most valuable restoratives in the debility and torpor of the liver, which remains after the successful treatment of hepatitis. Patients do not well bear above ten or twelve drops to a dose; and when given with small doses of sulphas magnesiæ, &c., it equals the purgative mineral waters. I think it will be found to be an antidote to prussic acid, as it instantly combines with it.

This form having the red oxide for its base, enables me to obtain some of the mildest, most efficacious, and beautiful of the preparations of iron.

FERRI BITARTRAS.

℞ Ferri Sulphatis, ʒ iij.; Acidi Nitrici, ʒ iss.

Tere simul guttatim:—cessatâ effervescentiâ, adde

Aquæ font., ℥ vj.; Potassæ Supertart., ʒ vj.

Coque, et liquorem tepidum per chartam cola; fiat sal siccus, s. a. Dose, gr. v.—xx.

The sulphate of potass here produced, adds greatly to the efficacy of the medicine, rendering it gently aperient.

POTASSIO-TARTRAS FERRI.

℞ Ferri Sulphatis, ʒ vj.; Acidi Nitrici, ʒ iij.

Tere simul guttatim per horæ quadrantem, adde

Aquæ font., ℥ vj.

Misce et per chartam cola, cui adde Potassæ carbonat, ʒ vj.—et sepone per aliquot horas: liquorem supernatantem effunde, ex oxido precipitato adde

Bitartratis Potassæ, ℥ iss.; Aquæ font., ℥ viij. vel. q. s.

Decoque et per chartam cola: leni calore consumatur liquor ad pulverem siccum. Dose, the same.

These two preparations dissolved in boiling water, continue in solution when cold.

AMMONIO-TARTRAS FERRI.

℞ Acidi tartarici, ʒij.; Ammoniæ carb., ʒj.; Aquæ font., ℥vj. vel. q. s. Misce fiat solutio.

℞ Liq. ferri oxysulph., ℥j.; Liq. Potassæ, q. s. M.

Wash the precipitate with distilled water upon a filter, add the oxide, while in the state of hydrate, to the above solution, and with a gentle heat, dissolve the iron, and evaporate to dryness. Vel,

℞ Liq. oxysulphat. ferri, ℥j.; Potassæ subcarb. ʒiij.; Aquæ font., ℥vj. M.

The precipitated oxide to be treated as above. Dose—gr. v—x.

Perfectly soluble in water. Contains about one grain in four of deutoxide of iron.

Here we have three preparations of tartrate of iron, which when mixed with a due proportion of water, are remarkable for their solubility, and the beautiful golden colour of the solution; hence form elegant mixtures for medicinal purposes.

LIQUOR FERRI BINIODIDI.

℞ Potassæ hydriodat., ʒss.; Aquæ puræ, ʒx. Misce, et adde Liq. ferri oxysulph., ʒij. M.

Dose—gr. xx—xxx. bis die.

This solution is of a beautifully deep red colour, and transparent. It contains, like most other iodides, a little free iodine; but retains its colour, and does not part with its iron; for I have some now by me which was made six years ago, and the only deposit is a little sulphate of potass. The liquor oxysulphatis ferri is also a test for the purity of hydriodate of potash, producing in the above proportions, a deep transparent solution.

LIQUOR FERRI DEUTOXIDI.

℞ Potassæ Carbonat., ʒij.; Aceti. dist., ℥iv. Misce, et adde Liq. ferri oxysulph., ℥j. M.

Capiat gtt. xxx—xl. bis terve die.

By long keeping deposits a peroxide.

This last form I have introduced here, chiefly as a valuable hint to the dyers: it is a speedy way of making acetate of iron, and contains the base of their most valuable colours, viz. the prussiates, gallates, &c.

In medicine, as well as in the arts, much disappointment would be avoided, and much advantage gained, in attending to the base, that is to say, to the state of oxidation of the mineral made use of; each oxide possessing essential properties, differing materially from each other. This we have already seen in the observations upon antimony and mercury; but it is more particularly evinced in the use of copper. In copper we have a valuable tonic and astringent in some cases of epilepsy, chorea, and uterine hæmorrhage; but nearly all the preparations now in use are unmanageable, as they contain peroxide, which is poisonous; while the protoxide is nearly inert. Even the ammoniaret, which is the mildest of them all, still requires the greatest care, as it also contains peroxide.

The celebrated Boerhaave was in possession of a preparation of copper, with which he was very successful in the treatment of many diseases; and Cullen laments his having left behind him no form for the preparation. But in looking over his Praxis Medica, I suspect it was the muriate he made use of, which, he says, is the least disposed of any to excite vomiting, but of which I have no experience.

Pharmaceutical Transactions, No. 11, *p.* 598.

29.—ON DIABETES MELLITUS.

By Dr. George Budd, F.R.S., Professor of Medicine, King's College, &c.

[In our former numbers will be found several interesting notices of Diabetes, which show the great importance of studying urinary diseases, and the great value of Chemistry in the pathology of some diseases. The case which drew forth the following remarks from Dr. Budd, was that of Joseph Hawkesworth.

Diabetes generally commences obscurely, and probably the the first symptom which attracts attention is the great quantity of urine which the patient voids, amounting to 10 or 12 pints instead of 30 or 40 ounces a-day. The urine is found not only to increase in quantity, but also in density. Instead of being within 1010 and 1020, which are probably the limits of health, the specific gravity usually ranges between 1035 and 1045, and in some instances, it even amounts to 1055. There must therefore, be a great discharge of solid matter from the blood.

Dr. Christison has calculated that two and a half ounces of solid matter are daily discharged from the blood of a person in health, of which nearly one half is urea. Calculating from Dr. Henry's table inserted in Dr. Prout's work, Hawkesworth parted with 20 ounces of solid matter daily, of which a great portion was sugar, which, in all these cases, resembles the *low* sugar of grapes.

It was at one time supposed that urea was entirely wanting in diabetic urine; but this opinion is not correct. Macgregor, Christison, and Bouchardat have established the fact that the quantity of urea is more frequently above the healthy standard than below it. "It was at one time supposed that the sugar found in the urine in diabetes was produced by disordered action of the kidneys; but this supposition has been lately disproved by the interesting discovery that sugar exists in the blood likewise", Dr. Maitland having obtained crystals of pure sugar from the blood of a diabetic patient. Another recent discovery is that by Mr. Macgregor, namely, that sugar is formed in abundance in the stomach by the process of digestion: the blood therefore in this case must be the channel through which it finds its way to the kidney. At the same time it is not always easy to find any considerable quantity of sugar in the blood after death, as it passes off by the kidneys with remarkable rapidity; and the same observation applies to urea, so that no accumulation of either of these bodies is ever found in the blood at any one time. Diabetes, therefore, must not be considered a disease of the kidneys, the sugar being merely eliminated by them, and they being frequently in a perfectly healthy state during the existence of the disease.]

The formation of sugar in the process of digestion, and the absorption of this sugar into the blood, are, therefore, cardinal facts in the pathology of diabetes; and to explain these must be the prime object of all theories of the disease. Let us now see with what success this object has been fulfilled by writers on the subject.

According to Dr. Prout, who is justly regarded as high authority in these matters, diabetes may be said to originate in loss of the power to assimilate the saccharine principles we take as food.

Under the term "saccharine principles" are included sugar itself, and a large class of substances, which, from being easily

convertible into sugar, and almost identical with it in chemical composition, may be regarded as its equivalents. These are mostly derived from the vegetable kingdom. The chief of them, considered as aliments, are woody fibre (the bran of corn, and fibres of other vegetables), gum, and starch; but the most important of these is starch.

In a state of health, all these forms of vegetable matter, which constitute a large proportion of our daily food, are capable of being digested and assimilated; that is, of being converted into the constituents of blood, and thence into the several tissues of which our bodies are made up.

Now, according to Dr. Prout, they are all in *healthy* digestion, first reduced to a *low* sugar; but this is only a transition state, and the sugar thus formed is at once converted into albuminous and oleaginous principles. Its existence in the stomach being, according to this theory, only intermediate and momentary, cannot readily be made a matter of experimental demonstration.

The first step, therefore, in the derangements in diabetes, consists, according to the writer, not in the formation of sugar in the stomach, which he considers a *healthy* process; but in the loss of that power which should convert the sugar so formed into the constituent principles of the blood, and through them into the living tissues of the body. He further believes, that, in advanced stages of the disease, sugar is not only formed in the stomach by the process of digestion, but that it is generated in other parts of the body from deranged assimilation, especially of the gelatinous tissues.

He considers the disease, then, to consist essentially in impairment or loss of this converting or organizing function of the assimilating organs.

[Bouchardat's theory (which is given in the 20th article, p. 74) is different to this, but is evidently too chemical. He supposes that diabetes originates in suppressed perspiration, and vicarious secretion of acid from the mucous membranes and glands of the digestive apparatus. But we must not be led away too much by the rapid progress of organic chemistry, and "fancy that chemistry is all sufficient to explain the phenomena of life—that, as has been advanced by a distinguished French chemist, man, like a steam-engine, is an apparatus that

owes all its activity and all its power to the combustion of carbon." Dr. Budd goes on to remark,]

In the treatment of diabetes according to the view I have taken of the pathology of the disease, we have two objects to aim at. The first and highest is, to strengthen the digestive and assimilating functions, in the impairment of which the disease seems essentially to consist; the second, to prevent, as far as possible, as long as the depraved digestion continues, the formation of sugar in the stomach, which, as I have already explained to you, seems to be the source of most of the other evils.

[The first of these objects must chiefly be attained by attention to the general health.]

In our endeavours to accomplish the second object—namely, to prevent the formation of sugar in the stomach—we are far more successful. We cannot, indeed, do this by medicines, but we can restrict the patient to food from which sugar cannot be readily formed. In this way, as I have already explained to you, we stay the emaciation and retard the progress of the disease; and although we exert no influence positively curative, we at least give time for the curative efforts of nature. As long, therefore, as the impairment of digestion continues, the patient should abstain from sugar, and as much as possible from all those principles, as starch and the vegetable gums and mucilages, which have nearly the same composition as sugar, and are readily converted into it. It was maintained by Dr. Rollo, who was one of the first to show the importance of diet in the treatment of diabetes, that the patient, for some time at least, should subsist entirely on animal food; and if we may judge from the cases published by him in support of his opinion, such a plan, if it could be carried out, offers a fairer chance of success than any other that has yet been tried. We might not, indeed, by this, prevent entirely the formation of sugar, because gelatine passes into sugar under the influence of various chemical agents, though not nearly so readily as starch. But it has been found impossible by most men to restrain their diabetic patients to a diet exclusively animal. After a few days' restriction to such a diet, the craving for vegetable food of some kind becomes such, that no fears for the future will deter the patient from indulging in it.

In consequence of this, most physicians have relaxed the rigour of Rollo's treatment, and in addition to animal food, and oleaginous matters, which often agree well, have allowed the patient bread and other articles made of the flour of wheat; which is supposed by Dr. Prout to be more easily assimilated than most other farinaceous matters.

But even of the articles thus granted him, he is not allowed to take unsparingly. The craving appetite, so general in diabetes, would often lead him to overload the stomach, and increase the disorder of digestion. He is, therefore, cautioned not to take too much at a time.

Besides attention to diet, on which we must mainly rely, various other means have been found useful. The chief of these are bleeding, opiates, and tonics.

At an early stage of diabetes, when, as often happens, the system is in a feverish state, general bleeding produces great relief, and manifestly retards the progress of the disorder. In more advanced stages, when we are deterred by the absence of fever and by the weakness of the patient from bleeding from the arm, cupping over the stomach, or an application of leeches, will frequently lessen the sense of heat or other uncomfortable feelings, so often referred to that part.

The effect of opiates in mitigating the symptoms of diabetes is still more striking. They are beneficial in every stage of the malady, and happily are not incompatible with any of the other means that have been found of service. They should, therefore, form part of every plan of treatment.

Tonics of various kinds—preparations of iron, quinine, carbonate of ammonia,—have been much recommended, and are, no doubt, beneficial when the exhausting influence of the malady has been long continued. Their good effects are, however, far less obvious than those of opiates.

[Hawkesworth, on entering the hospital, was particularly cautioned against taking sugar, fruits, and vegetables, and was restricted to a diet of meat and bread, and for drink, beef-tea and a pint of porter daily: and, acting on the opinion of M. Bouchardat, the action of the skin was restored by a warm flannel dress, and a hot-air bath, which was repeated once or twice a-week.]

On the 27th of December, again acting on the advice of M.

Bouchardat, we deprived him of ordinary bread which he had hitherto been taking, and gave him instead what M. Bouchardat calls gluten-bread—that is, bread made of flour that has been deprived of the chief part of its starch. The flour of wheat is composed of gluten and starch, in the proportion of one of the former to three or four of the latter; and the two principles may be readily separated by washing out the starch from dough.

It appears from some recent experiments of Magendie, that gluten extracted from wheat flour is of itself sufficient for the nourishment of dogs; and it seems probable, therefore, that a diet of animal food and gluten contains all that is requisite for the support of man—at least, for a considerable time. But bread made of pure gluten is so leathery—so glutinous—that it is impossible to masticate it. In order to make any thing that can be called bread, we are obliged to leave a certain proportion of starch with the gluten. The gluten-bread that we have given Hawkesworth, is made by Mr. Bullock, a chemist in Conduit Street. In the first samples he sent there was one-sixth of the natural quantity of starch. In order to render it more dry and crisp the bread was made into rusks: but even in this state it was rather difficult to masticate, and Hawkesworth made great complaint of it.

Latterly, one-fifth of the natural proportion of starch, which is, I believe, the proportion recommended by Bouchardat, has been left with the gluten; and since this change was made, Hawkesworth has been very contented with his bread. The bread is light, and when toasted, is almost as agreeable to the taste as ordinary bread.

The substitution of the gluten-bread for ordinary bread was immediately followed by diminution in the quantity of urine, which was at once brought down to about four pints a-day. The sp. gravity, however, continued as before, about 1040.

On the 4th of January we found a sudden increase in the quantity and in the density of the urine; and, after much close questioning, we discovered that he had been eating some rice-pudding, which contains sugar, and which the nurse, yielding to his entreaties, had given him.

This is the second time, since his admission to the hospital, that our endeavours to carry out this treatment have been frustrated by want of resolution on the part of the patient; and this

you will find constantly happening in diabetes. In confirmed stages of the disease the patient becomes irresolute and childish, and has no strength of mind to resist the cravings of his appetite. This peculiar imbecility of mind is, probably, in some measure connected with the defective nutrition of the brain, which is so remarkable in advanced stages of diabetes. In the bodies of persons dead of this disease, the brain is always very remarkably shrunk; in consequence, no doubt, of the great wasting of all fatty matter. The void left, is, as usual, filled up with serum.

Since the 4th of January the quantity of urine has on one occasion been so little as two pints and a half in 24 hours; but it has averaged about four pints. It has regained in some degree the natural urinous odour; but the sp. gr. has not at all diminished. It is now seldom less than 1040, and on some days 1045.

Since he commenced the gluten-bread, the general symptoms of diabetes have much diminished: the appetite has become less, and the thirst is very slight, except in the morning before breakfast: his complexion is less sallow than it was, and his tongue cleaner: he says that he is much stronger, and he has certainly ceased to lose flesh.

It is evident, however, that the treatment is only palliative. The urine has still the high sp. gr. of diabetes; and the quantity he passes is as much charged with sugar as ever. All that we effect by the gluten-bread is, to carry out more fully, and for a longer time than we have yet been able to do, the principle of depriving the patient of articles of food readily convertible into sugar; but we do not restore to the stomach the power of healthy digestion. We relieve the thirst, retard the emaciation, and prevent, perhaps, for a time the occurrence of tuberculous disease of the lungs: we give longer time for the action of medicines, or for the *vis medicatrix naturæ*. This is certainly no slight advantage: it is, in fact, as much as we ever accomplish in strictly organic disease.

It seems probable, therefore, that bread made of flour deprived of a certain portion of its starch, will in future form an essential part of the dietetic treatment of diabetes.

Medical Gazette, April 22, 1842, *p.* 164.

M. Bravais, médecin de l'hospice d'Ammonay, has narrated two very interesting cases of complete cure of diabetes mellitus,

though in one it was complicated with a tubercular deposition in the right lung.

The latter case was complicated with, and indeed commenced with, retention of urine; and the patient aged 67 years. He began in October, 1840. The symptoms of diabetes mellitus declared themselves decidedly on the 14th of November; on the 18th, the plan of M. Bouchardat was followed out in all its rigor.

The following articles of food were strictly proscribed, bread, potatoes, rice, barley, vermicelli, haricots, sugar, apples, pears, raisins, and all food gummy, saccharine, or feculent.

These articles of food were allowed:—animal nutriment, beef, mutton, fowls, and bacon, milk in every form, eggs, cheese, chocolate (without sugar), occasionally spinnage, chicory, sorrel, salades, cabbage, and onions.

[We suspect that some of the articles in this list, especially spinnage, would prove injurious to the patient; but still, it is interesting to observe the food used in a successful case, as from a want of variety in the food allowed, we often find that the patient secretly has recourse to matters still more injurious.]

The patient was constantly tormented with thirst, and desire for cold fresh water, but this I never allowed without its being charged with some nutritive principle, or tonic medicine. On the 1st of December, 13 days after the treatment was begun, the urine was reduced one litre a day, having before averaged from eight to ten litres in the 24 hours. At first it contained twenty grammes of yellow insipid sugar in the three litres, on the 8th of December, twenty-two grammes in six litres of urine.

The treatment was continued with occasional administration of opium and camphor. He had only one relapse, from taking sugar in his coffee.

His improvement was progressive; in January he began to eat rice, in February and March, he took potatoes and sugar, and yet the disease did not return, but he gradually regained his *embonpoint*. From the first of April he has used with impunity all kinds of diet.

Deductions.—The treatment in diabetes should always be tonic and excitant, never the reverse. The diet should be as strictly animal as possible; and *this disease is one in which we*

should be guided by the patient's repugnance to any article of food. The treatment should be continued a long time, even after the patient considers himself quite cured; if not he is in danger of a relapse.

Journal des Connaissances Medico-Chirurgicales.

30.—DIACETATE OF LEAD IN INTERNAL HÆMORRHAGE.

By —— Sweeting, Esq.

Mr. Sweeting is of opinion that this remedy has been administered in inefficient doses, and with objectionable combinations. Mr. S.'s practice is to give it in five grain doses, every two, three, or four hours, according to circumstances. "The last case," he observes, "in which I employed the diacetate was one of uterine hæmorrhage consequent upon abortion. The woman had miscarried the day before I saw her; she had lost a large quantity of blood, and the hæmorrhage was still going on; she was pale, restless, sick, and the pulse scarcely perceptible at the wrist.

I immediately gave her five grains of the diacetate dissolved in distilled water, and repeated it every hour for twelve consecutive hours, and upon an abatement of the hæmorrhage, continued it every four hours for the next twenty-four; the woman recovered.

The diacetate should be rubbed up with a few drops of concentrated pyroligneous acid, in order to ensure a complete solution of any carburate of lead, distilled water added, and the whole filtered through paper: with these precautions no ill effects need be feared.

A young gentleman labouring under typhus fever was attacked with diarrhœa and discharge of blood from the bowels, the diacetate in the full dose was administered, and both hæmorrhage and diarrhœa were restrained after two doses. He recovered.

About two years since, I was called to a man in this village labouring under a clearly marked case of Asiatic cholera. He had been attacked at seven in the morning, but I was not sent for till noon, when I found him pale, pulseless, cold, and all but in that frightful state of collapse denominated the blue stage. I gave him five grains of the diacetate immediately; the draught was at once rejected. I then administered one

grain every ten minutes in a teaspoonful of acidulated water. After he had taken the medicine for the space of two hours, the spasms wholly left him, with every symptom of immediate danger, and the man speedily recovered."—*Provincial Medical and Surgical Journal, Aug.* 14, 1841.

American Journal of Medical Science, Oct. 1841, *p.* 465.

31.—ON POISONING BY LAUDANUM.

By Dr. Buck.

The following case related by Dr. Buck, in the Boston Med. and Surg. Jour. March 31, 1841, deserves notice if for no other reason, than for the novelty of the treatment employed. A young female aged 22, swallowed an ounce of laudanum. The ordinary symptoms soon succeeded. There was a state of almost perfect insensibility, the face livid and swollen, pulse slow, not exceeding 45 in a minute, and the jaws firmly shut. Dr. Buck saw her in about half an hour, and prizing the mouth open, put into it 40 grains of ipecac., and as much of sulphate of zinc, in half a gill of water. He repeated this dose at intervals of ten or fifteen minutes, five times, using 200 grains of ipecac. and as much sulphate of zinc. It is doubtful, however, whether any was swallowed. In half an hour, as no change had occurred, he injected into the stomach through an elastic catheter, twelve grains of tartar emetic dissolved in half a gill of water. After waiting half an hour, and perceiving no symptoms of an operation, he threw down 24 grains of tartar emetic. This in a short time induced a very feeble effort to vomit, and about half a gill of fluid was thrown up. But the symptoms became more alarming; the pulse was slower, and the face extremely livid, while respiration was nearly extinct. He now threw down sixty grains of sulphate of zinc dissolved in half a pint of water, but without any sensible effect.

Under these circumstances, seeing that there was no prospect of making her vomit by any ordinary means, I was resolved to make an experiment. I injected a pint of vinegar into the stomach, and immediately after it, a large teaspoon four times heaped full of sal æratus, dissolved in half a pint of warm water. The effect was instantaneous. It broke forth foaming from the mouth in a stream of the full size of that orifice, with such a force as to be projected a yard or more. The quantity thrown

up, I judged to be at least a quart, in a state of complete effervescence. In about fifteen minutes, as there was no further vomiting, I repeated the operation, using but half the quantity of vinegar with the same quantity of sal æratus and water, with the same immediate effect, and then left her for the night, with directions to give her freely strong green tea, if she should recover sufficiently to drink it.

Next morning, I found her much prostrated, had vomited several times during the night, but was perfectly rational. She gradually recovered.

American Journal of Medical Science, Oct. 1841, *p.* 516.

32.—ON RHEUMATIC DERMALGIA.

By J. H. S. Beau, Paris.

Neuralgia of the skin has hitherto been usually confounded with pains of the nervous trunks, muscles, &c. M. Piorry was the first who referred it to a separate head under the name of *dermalgia.* It frequently coexists with neuralgia of the nervous trunks, with ramolissement of the brain; or occurs in cases of inflammation of the spinal cord. Severe pain in the uterus is often attended with dermalgia of the skin of the pelvis and thighs, and clavus hystericus is frequently a neuralgic affection of the skin.

There are several other forms of this affection, but one which has escaped notice down to the present time is rheumatic dermalgia. This is of more frequent occurrence among men than women, and is induced by damp, cold, and those other causes to which rheumatism generally is owing. Hence it is most common at the beginning of spring. The head and lower extremities are the parts usually attacked, but the pain is not stationary in one place; often changing its seat in a gradual manner, just as erysipelas sometimes wanders from place to place. Patients experience two kinds of pain, the one abiding, the other intermittent and severe, resembling the prick of a pin or an electric shock, and recurring about every thirty seconds. The abiding pain is frequently little more than a permanent exaltation of the natural sensibility of the skin. Friction of the part with the finger or with the patient's dress, always increases the pain; and if the affected part is covered with hair, very severe suffering may be produced by passing the hand over the

hair. The intermittent pain is often at once excited by touching the part in this manner, and though firmer pressure puts a stop to the permanent pain, the return of the intermittent pain cannot be thus prevented. The intermittent pain is always considerably worse at night. Rheumatism of the skin usually alternates with that form of the disease which affects the muscular and fibrous tissues. Its usual duration is from a day to a couple of days, and it subsides by degrees just in the same way as it made its attack. The author met with three instances in which it was accompanied with fever, and involved a much larger surface of skin than usual. It is, in general, an affection easily curable. The indications for its treatment do not differ from those to be observed in ordinary rheumatism, but it does not generally require any very active remedial measures. To prevent its recurrence, it is always desirable for the patient to wear flannel next his skin.—*Arch. Gen. de Med.*, and *Brit. and For. Med. Rev.*

Medical Gazette, Feb 25, 1842, *p.* 879. *See also, Provincial Medical and Surgical Journal, Jan.* 29, 1842, *p.* 361.

[Nearly allied to this form in many respects is the Muscular Rheumatism described in Dr. Macleod's recent work on rheumatism.]

This form of the disease consists, in the milder cases, of a dull uneasiness in the part while at rest, which, however, becomes converted into an acute cutting pain when moved. Sometimes, indeed frequently, there is no discomfort except on calling certain muscles into action, and if this, from forgetfulness or other cause, be done abruptly, the suffering is often so acute as to make the patient cry out involuntarily.

Lumbago is a very characteristic form of muscular rheumatism. It occupies the loins, and is often aggravated to torture by an unguarded movement implicating the muscles of the part; but if the patient remain perfectly quiet, he is comparatively free from suffering. When very severe, he may be obliged to remain in bed, and very often is confined to the sofa. Even when he is able to walk about, he often does so in a semibent position, being unable to raise his body into a completely erect posture for some time after he has risen; nay, in some cases he cannot straighten himself at all.

Pain of exactly the same character not unfrequently attacks the muscles of one side of the neck, and the head is generally

held awry to relieve the suffering part. Either of these may be brought on by sitting in a draught, or otherwise exposing the parts to cold, especially if combined with moisture.

Another very frequent seat of muscular rheumatism is the intercostal space, where it is difficult to say whether the muscular or fibrous tissues are involved; and indeed the pain on inspiration is often as acute as a stitch of pleurisy. From this, however, it is easily distinguished by the absence of pain, and the complete relief afforded by fixing the ribs, and breathing with the abdominal muscles.

I have also more than once seen the same kind of affection in the abdominal muscles, the pain being completely controlled by putting a roller tightly round the body, or otherwise preventing the muscles from acting.

[In this, as indeed in all forms of rheumatism, the pain is much greater in the night than in the day. The obstinacy of chronic muscular rheumatism is proverbial, and is much aggravated by atmospherical vicissitudes. It often occasions, when long continued, a wasting of the limb.]

Purgatives are very frequently of great service in the different forms of muscular rheumatism, more particularly in lumbago, and as a general rule ought to precede the use of other remedies. The best plan, where there is nothing to contraindicate its adoption, is to give from three to four grains of calomel at night, followed by a black dose next morning, and to repeat this once or twice during the first week; after which it is sufficient to regulate the action of the bowels, and to give rather a brisk purgative about once a-week.

But in the kind of rheumatism to which I now refer, where it has not been preceded by the acute stage, and where the muscles are chiefly affected, remedies of the warm or stimulating kind are decidedly most useful. Amongst these, none has appeared to me to be so frequently efficacious as the ammoniated tincture of guaiacum. Half a drachm is a sufficient dose with which to begin; but most persons bear—and indeed require—a drachm, three times a day, and with some it is necessary to increase the dose to two drachms or more. The most common sensible effect is that of purging the bowels, and where this is the case to any great extent, the dose must be either diminished or discontinued. In most patients, however, it may be so managed as to regulate the alvine evacuations; and the tendency

to diarrhœa may be prevented without inconvenience, by means of opium, which, in doses of about a grain each night, may assist materially in the curative process. There are two other forms in which this remedy has been frequently used in rheumatism, namely, the mistura guaiaci, and the compound familiarly called the 'Chelsea pensioner.' The first I think less efficient in this form of the disease than the ammoniated tincture; the latter (composed of guaiac, rhubarb, cream of tartar, sulphur, and nutmeg,) may be substituted with advantage for the tincture in those cases which prove very obstinate and lingering. The general effects which the remedy produces in any form which agrees with the patient, and which is likely to prove serviceable, are an agreeable sense of warmth in the stomach, followed by moderate perspiration, or, where the surface is kept cool, by increased action of the kidneys. In full doses it sometimes produces an eruption on the skin like urticaria; but I have never seen any serious inconvenience result from this.

Medico-Chirurgical Review, April, 1842, *p.* 420.

33.—CROTON OIL IN TIC-DOULOUREUX, &c.

By J. A. Easton, M.D., Professor of Materia Medica in Anderson's University, &c. Glasgow.

[A good deal has been written of late concerning the efficacy of this drug in different nervous affections. In article 11, Retrospect No. III, will be found an account of the experience of Dr. Newbigging, of Edinburgh. Sir Charles Bell we believe, was the first to point out its efficacy in tic-douloureux. In his "Practical Essays", he makes the following remarks on this remedy: "Reviewing my experience, I am borne out in believing that the disturbed function of particular parts of the intestinal canal gives rise to pains, differing in their apparent places according to the portion of the canal irritated. Here, I conceive, there is a wide field for inquiry. If the intestinal canal is estimated at seven times the length of the body, and if it be also acknowledged that the different portions of this long tract of mucous membrane, perform distinct offices, and are subject to different influences, there is nothing to repel the idea, that these portions, being in a state of disturbance and irritation, shall produce a variety of symptoms, especially differing in their apparent locality. And this view is countenanced by the effect of medi-

cine. We can throw the influence of evacuants on the different portions of the canal, affect the stomach, the duodenum, the long intestine, the colon, or the rectum. Thus is each portion of the intestine proved to be distinct in office, and to possess distinct affinities. It is on this principle that we ought to pursue the inquiry,—*first*, on what part of the extended canal does this secret disturbance fall; and *secondly*, what form or combination of medicine shall especially touch or influence the part affected? We have an instance in the effect of the croton oil. Let us not call it a specific, but seek for other remedies on a just and scientific principle."—*(London and Edin. Monthly Journal of Med. Science, Feb.* 1842, *p.* 155.) In article 18, of Retrospect No. IV., Mr. Cochrane, of Edinburgh, gives an interesting account of its efficacy in other nervous affections, to which we advise the reader to refer; and in this article a good case is given by Dr. Easton, of Glasgow, where its efficacy in tic-douloureux was remarkable. He relates the case as follows.]

Pain, represented as excruciating and darting, is experienced at stated periods in the left side of the scalp from forehead to augments his sufferings to an almost intolerable degree. The vertex, while pressure on the trunk of the left supraorbital nerve headach commences about five in the afternoon, and continues without intermission or abatement for fourteen hours, during which the patient is so distractingly agonised that he feels a strong desire to dash his head on the wall, or any other solid body that is within his reach. His friends state, that at this period he is slightly incoherent. With the termination of the dreaded fourteen hours, return tranquillity of mind and alleviation of pain. The bowels are regular, the pulse is 80, the skin cool, the tongue whitish; but it ought to be mentioned, that when these observations were noted, the headach, though severe was comparatively tolerable. The following was ordered:—

℞ Croton oil, gtts. ij; Compound extract of colocynth, gr. xij.

Make into four pills, of which let one be taken every two hours.

On the next day (the 11th) the headach was greatly relieved, though by no means removed. The medicine, to use his own language, had produced "above forty stools" of a yellow colour and most offensive smell. The urine was greatly increased in quantity, and of a deep-red colour. Desirous to follow up the

success which had been evidently obtained, I ordered the pills to be repeated; but the severe purgation which they had induced formed an obstacle to their administration, which neither argument or entreaty could overcome. Under these circumstances the treatment at first adopted was abandoned.

[But the pain soon returned with equal violence, nothwithstanding the exhibition of arsenical solution (eight drops increased to ten drops) three times a-day. The croton oil was ultimately tried again as follows.]

℞ Croton oil, gtts. ij; Crumb of bread, q. s.

Make into four pills; one to be taken every three hours.

15. Pain of head did not return until five hours after the usual period, and when it did commence, was less severe; alvine evacuations frequent, but neither so copious nor so offensively fœtid as formerly, and of natural colour; urine greatly increased in quantity. Continue the pills.

16. Had only four hours of pain which was moderate and tolerable; alvine evacuations abundant, but not profuse; no note of state or amount of urine. Continue the pills.

17. Has had no headach since last visit; slept well last night, and is refreshed, composed, and cheerful. Take one pill night and morning.

18. No return of headach; feels perfectly well, and is anxious to resume business. Pills produced no greater action upon the bowels than what an ordinary laxative might have been supposed to have induced.

24. Continues free from headach up to this date.

[This patient had had recourse to severe purging before taking the oil, but had experienced no particular benefit, so that we may suppose that there is some specific virtue in the medicine independent of its purgative qualities. One circumstance is generally noticed during its exhibition, namely, the urine is increased in quantity, and is evidently denser than usual, and the alvine evacuations are of a yellow colour and most offensive smell.]

Now these are precisely the more important physiological actions of *colchicum autumnale,* so valuable an agent in articular rheumatism, to which, in my opinion, neuralgia bears a strong resemblance. The seat of this latter ailment is, I conceive, in the fibrous neurilema, while under the influence of

that modified form of inflammation which is set up in the fibrous structures of the joints when they are attacked with rheumatism. Not only does identity of tissue support this view of the pathology of the disease, but similarity of symptoms also, particularly the characteristic tendency in both maladies to periodical exacerbations and to intervals of comparative repose. Dr. Lewins, of Leith,* has demonstrated from chemical analysis, that by the exhibition of the meadow-saffron the specific gravity of the urine occasionally rises from 1·009 to as high as 1·037; and that the cause of this increased density is the augmentation of urea and of urate of ammonia, results which Dr. Lewins tells us have been verified by Professor Chelius, of Heidelberg. By the influence of colchicum also, as well as by that of croton tiglium, the alvine evacuations assume a bright yellow colour, the liver being stimulated apparently through the duodenum, in accordance with the physiological law, that when a membrane is irritated on which an excretory duct opens, the gland from which that duct proceeds is excited to unusual secerning activity. Can it be then that the croton tiglium is similar in its action to the colchicum autumnale, and that it does good in *tic douloureux* by inducing the same effects that colchicum does when it alleviates the sufferings of the gouty and the rheumatic—by eliminating urea and uric acid salts through the urine when these highly nitrogenous productions of the blood are in excess, and thereby the sources of constitutional irritation, and also by causing a supersecretion of bile? We know that colchicum is an invaluable remedy in fibrous or articular rheumatism; and if I am correct as to the pathology of neuralgia, and if croton oil is beneficial in that disease, is it unreasonable to suppose that two remedies which cure similar complaints should do so in a similar manner?

Lancet, Jan. 29, 1842, *p.* 609.

34.—RAPID VESICATION AND COUNTER-IRRITATION BY BURNING ÆTHER, &c.

By C. J. Edwards, Esq. Surgeon to the Batheaston Lying-In-Charity.

[In cases which require very rapid and energetic counter-irritation, the practice of Mr. Edwards may occasionally be

* On Colchicum Autumnale, in the Edinburgh Medical and Surgical Journal for July, 1841; and Braithwaite's Retrospect, No. IV., Art. 2.

resorted to; viz., that of rubbing æther, spirits of wine, or any other spirituous application on the part intended to be blistered, and then setting fire to it; in short it is another way of applying the actual cautery. In one case of the convulsions, Mr. Edwards says:]

As a last resource, I rubbed the spine with gin, from the cervical to the lumbar region, and set it on fire; in less than half a minute the convulsions ceased. The boy was now put into a blanket, carried to bed, purged freely, and in a few days was convalescent; he was about eight years old.

A similar case was that of a daughter of a solicitor. The cause producing the convulsions resisted measures equally vigorous to those which were used in the first patient. The amiable mother, who, unfortunately, had been taught too severe a lesson in the trying school of her children's sicknesses, had already applied numerous leeches to the head of the sufferer, and given a smart dose of calomel and scammony; all our remedies seemed powerless, when I sent for the sulphuric æther, and, rubbing it on the spine, set fire to it. The convulsions soon ceased, the child gave a heavy sigh; the danger had passed. I should observe that this young lady, when on a visit in Bath, had an attack equally severe to that in which my professional services were required. The same powerful depletory means were used, but with no avail, and no sign of any amendment was visible, until ammonia, combined with assafœtida, were rubbed on the spine and on the epigastrium. I believe the case was regarded as quite hopeless by the medical gentlemen then in attendance.

[In a case of croup, the vesication was produced by hot water. A piece of flannel was rolled to the thickness of the finger, dipped into boiling water, and immediately applied round the throat. The symptoms were subdued in a few minutes.]

Provincial Medical and Surgical Journal, Jan. 1, 1842, *p.* 268.

35.—PHARMACEUTICAL BREAD.

By Mr. Henry Deane.

Flour, 3 lbs. Imperial; Cold Water, 1½ pint Imperial; Sesquicarbonate of Soda, ½ oz. (Troy Weight); Hydrochloric Acid, 5 fluid drachms; a small quantity of Salt, if required.

Mix the soda perfectly with the flour, and the acid with the water, then the whole intimately and speedily together, using a flat piece of wood or spaddle for that purpose, in preference to the hand. It may be made into two loaves, and put into a quick oven immediately. It will require about an hour and a half to bake.

Precautions.—Let the soda be well mixed with the flour, for wherever a small lump of it is deposited unmixed, it is not perfectly acted upon by the acid, and causes a yellow spot in the loaf, which however is more unsightly than detrimental.

The acid is the muriatic of commerce, and should have a specific gravity of 1·16. It should be mixed with the whole of the water to be employed.

The water should be as cold as possible. Three pounds of flour require about a pint and a half to make it into dough of proper consistence: but as the quality of flour varies according to season, and other circumstances, a little more or less water may be used as occasion may require.

The dough should not be made stiff. The thinner it is, so that it may be conveniently handled, the lighter will be the bread. Much kneading is detrimental.

The largest quantity of flour that can be conveniently mixed at one time is about 12 lbs.; where more is required, it is better accomplished by mixing it separately.

It requires a hotter oven and more time to bake than fermented bread does.

The advantages to be derived from this process are important. In all climates and under all circumstances it may be adopted; and by it is entirely obviated all difficulty of procuring yeast or ferment, which is frequently of an inferior quality, vitiating the bread, and rendering it more or less unwholesome.

The bread being free of all yeasty particles is more digestible, and not so liable to create flatulence, or turn acid on weak stomachs, as fermented bread is apt to do even when of the finest quality.

It is a great saving of time, trouble, and litter, and may be employed at all seasons of the year, without reference to temperature or atmospheric variations.

Economically, yeast may possibly have the advantage when plentiful and good; but when scarce and bad, a common state of things during the summer months, particularly in remote

districts, the saving of time, trouble, and risk is invaluable. Where much bread is made for a family, as at some farm-houses, by purchasing the materials in large quantities, a considerable saving may be effected.

Pharmaceutical Transactions, No. 9, p. 492.

[This will be perceived to be a modification of a process invented by Dr. Whiting, and improved by Mr. Dodson, of Blackman Street, Southwark, (see Retrospect, No. 2, article 76.)]

36.—SATURATION OF ACIDS AND ALKALIES.

By Mr. Henry Scholefield, Oxford Street.

Thinking it probable that a few remarks upon the subject of Saturation, as connected with the preparation of prescriptions, may be of advantage to the dispenser, I have arranged the following, accompanied by a table, for the purpose of showing, at a glance, the quantities requisite for the purpose; which, although containing nothing new, may, nevertheless, prove to be of practical utility, in a collected form, as an article of reference.

The advantages of definite proportionals over the ordinary methods resorted to for saturation, are very considerable. From the one of adding either acid or alkali until effervescence has ceased, great variations are likely to ensue; whilst from that of testing, by means of turmeric and litmus papers, the product is almost certain to contain alkali in excess, in consequence of the free carbonic acid being sufficient of itself to affect the test paper.

In the application of this table it should be observed, that the articles adduced are those of the London Pharmacopœia, 1836, in their *pure state;* consequently if either be deteriorated in any way, the rule is unavailable: for example, the hydrated sesquicarbonate of ammonia is composed of the carbonate and bicarbonate of the base, the former of which evaporates upon exposure to the air, leaving the latter a neutral salt, requiring, during the process, a decreasing quantity of acid for saturation. Pharmaceutists should, therefore, select a crystalline portion for operation in preference to using the powder.

I have calculated lemon juice as containing one ounce of citric acid in fourteen fluid ounces, which is the average ratio; but as

it varies according to the time of year, and from other causes, latitude of one drachm is given.

Supposing the articles kept by chemists and druggists to be in a perfect state of purity, this table will be found intrinsically correct, and available for all ordinary purposes in compounding prescriptions wherein "quantum sufficit ad saturationem" is ordered.

ONE SCRUPLE.	LEMON JUICE.	CITRIC ACID.	TARTARIC ACID.
	Drachms.	*Grains.*	*Grains.*
Potassæ Bicarbonas.....	3 to 4	13·86	14·85
" Carbonas.....	$3\frac{1}{2}$ — $4\frac{1}{2}$	16·76	17·95
Ammoniæ Sesquicarbonas..	5 — 6	23·74	25·44
Sodæ Carbonas.....	2 — 3	9·72	10·41
" Sesquicarbonas.....	$3\frac{1}{2}$ — $4\frac{1}{2}$	16·86	18·07

The alkaline standard of a scruple is chosen for the convenience of calculation; with the acids it is not presumed that manipulators will weigh to the minute decimal parts of a grain, yet I conceive accuracy essential in arranging a table, from which dispensers may act according to their judgment.

Pharmaceutical Transactions, No. 9, p. 488.

37.—ON INFUSIONS, &c.

Mr. Jacob Bell amongst other useful observations, notices the fact, that infusion of orange peel, if the process of infusion have been continued during a quarter of an hour, is a clear and elegant preparation: but if the infusion be allowed to stand on the dregs a few hours, it becomes muddy, acquires a nauseous taste, and is more liable to spoil by keeping. The infusion of rhubarb and of calumbo, he says, are remarkable instances of the same kind. He adds that rhubarb and senna, treated with cold water, have been found by experiment to yield larger proportions of extract, and more efficacious products, than when hot water has been employed.

Mr. Alsop *(American Journal of Pharmacy)*, shows that the ordinary process of infusion defeats its own end. When the materials are in the bottom of an infusion jug, the water being above them, a saturated solution is formed below, which acts as a septum between the lower and upper strata; and hence the process of extraction is but imperfectly effected. He proposes

therefore, that the infusion jug should have a diaphragm in its upper part, on which the materials should lie. If boiling water be poured on, so that it should rise above the materials, it will happen that as soon as the water in contact with the materials becomes saturated, and therefore, specifically heavier, it will descend, and be replaced by water less loaded, and hence more capable of extracting new matter. Mr. Alsop, alluding to the ephemeral nature of infusions, informs us that they may be preserved a long time by the following process. When the maceration has continued during the time prescribed, the infusion should be strained *while hot,* and immediately transferred to bottles provided with accurately ground stopples. The bottles are to be made perfectly full; and the stopples must displace their own bulk of the liquid. As the solution cools a partial vacuum is formed by its contraction, which is the more complete the higher the temperature was at which the liquid had been bottled. In this way, infusions may be preserved for months.

This is Appett's principle of preserving meats, soups, &c. Mr. Alsop's proposal appears to be a most useful adaptation, and would, if practised, save apothecaries a great deal of annoyance, and the patient a great deal of delay.

Steel Pills of Dr. Blaud.—These may be prepared in the following manner:—Take of Berthemot's sulphate of iron half an ounce (Troy), dry it at about 100°, and reduce it to a fine powder; with this mix intimately an equal quantity of hastily-pulverised sub-carbonate of potash. To the mixture add three drachms of honey, and form a mass. This, if too soft, will soon harden. The decomposition does not take place until the honey has been added; and then the absorption of oxygen, although it commences, is arrested at the same point as the *sucre ferrugineux* of MM. Klauer and Becker, for in all of these the principle is the same.

In the whole mass, as prepared above, there are 63 grains of oxide of iron. Hence, if the whole mass be divided into 165 pills, then each drachm into 15 pills, each pill will contain scarcely more than one-third of a grain of oxide of iron, almost entirely in the state of protoxide. These pills will keep a long time without absorbing oxygen. (See *Journal de Pharmacie, March* 1841.)

Dublin Medical Press, Oct. 27, 1841, *p.* 260.

38.—ON COUNTER-IRRITANTS.

By Dr. Turnbull.

[The following are the formulæ adopted by this gentleman:]

TINCTURA CAPSICI CONCENTRATI.

℞ Capsici Baccarum, ℥iv.; Spiritus Vini Rect., ℥xij.

Macera per dies septem et cola. (It may also be made with advantage by displacement.)

This concentrated tincture is used as an external application, and is found to be a powerful rubefacient and counter-irritant, for which purpose the ordinary tincture of capsicum is not sufficiently powerful.

Veratria, dissolved in this tincture, acquires increased activity; the capsicum apparently facilitating its absorption into the skin. Four grains of veratria, dissolved in an ounce of the concentrated tincture of capsicum, will be found as powerful in its effect as twelve or fifteen grains dissolved in alcohol.

PULVIS ALUMINIS ET CAPSICI.

℞ Aluminis Sulphatis, partes tres; Tinct. Capsici Contentrati, partem unum.

Misce et sicca.

A very small quantity of this powder, applied to the tonsils, is found more efficacious, in some cases, than an alum and capsicum gargle.

UNGUENTUM IPECACUANHÆ.

℞ Pulvis Ipecacuanhæ, ℥ij.; Olei Olivæ, ℥ij.; Adipis, ℥ss. M. ft. unguentum.

UNGUENTUM EMETINÆ.

℞ Emetinæ, g. xv.; Sp. Vini Rect., q. s.; Adipis, ℥ss. M. ft. unguentum.

Dr. Turnbull states that he has found this ointment particularly efficacious as a rubefacient in pulmonary and rheumatic affections, producing little or no pain or inconvenience to the patient.

Pharmaceutical Transactions, No. 11, *p.* 601.

39.—ANTIDOTE TO THE SALTS OF COPPER.

By M. Benoist.

Liquid albumen is generally administered as an antidote in cases of poisoning with the salts of copper, but it has this dis-

advantage, that, as we are unacquainted with the exact quantity necessary to neutralize the copper, if we employ too great a quantity, the poison is dissolved in the excess of albumen. To remedy this inconvenience M. Benoist proposes to substitute for albumen a solution of carbonate of soda, which forms with the salts of copper an insoluble carbonate, having no deleterious action on the economy.

American Journal of Medical Science, Oct. 1841, *p.* 506.

40.—ON BLISTERING PLASTER.

By M. Soubeiran.

According to Dr. Müller, the uncertainty which sometimes attends the effects of blistering plaster, as usually prepared, may be ascribed to the circumstance of the vesicating principle remaining locked up in the tissues of the fly.

In order to obtain a plaster more uniform in its operation, Dr. Müller recommends that the cantharides be left to digest in the plaster, kept fluid at a moderate heat, for five or six hours.

I consider this suggestion of Dr. Müller's a very good one to follow: it nearly corresponds with what M. Guibourt has said on the same subject; but the prolonged digestion of the cantharides ensures the solution of the active principle more effectually than would be the case if they were merely incorporated with the plaster while still hot, according to M. Guibourt's recommendation.—*Journal de Pharmacie.*

Pharmaceutical Transactions, No. 9, *p.* 502.

41.—ARTIFICIAL HARROGATE WATER.

Where the genuine Harrogate water cannot well be procured, the following will be found a good substitute:—

ARTIFICIAL HARROGATE WATER.

℞ Sulphatis Potassæ cum Sulphure, ʒj.; Potassæ Bitartratis, ʒss.; Magnes. Sulphat., ʒvj.; Aquæ Destillat, lbij.

Solve.—Capiat dimidium p. r. n.

The above is sufficient for a quart, and ought to be taken early in the morning before breakfast, and be followed by a walk, to produce the desired effect.

The artificial Harrogate salts are very much employed, and not unfrequently by those who drink the genuine water, for the purpose of increasing its aperient power. The salts may be made as follows:—

HARROGATE SALTS.

℞ Sulph. Potass cum Sulphure, ʒ vj.; Potass. Bitartratis, ℥ j.; Pulv. Magn. Sulph., ℥ vj.

M. bene.

The usual dose of the above is one tea-spoonful in a small tumbler full of tepid water, early in the morning.

Pharmaceutical Transactions, No. 7, p. 323.

42.—GELEE POUR LE GOITRE.

By Mr. Thomas Beesley, Banbury.

[An elegant preparation of iodine with the above name is sold at Lausanne in Switzerland, which is found of great use in the same cases for which we use it in this country. It certainly is an elegant way of compounding the iodide of potassium, and is not liable to the reduction of the iodide, and consequent discolouration which sooner or later renders the ointment of iodide of potassium objectionable. The proportions of course can be varied, and a little essence of rose, or oil of lavender added if required.]

Dissolve by a gentle heat, ʒ vj. or ʒ vij. of white soap in ℥ ij. of proof spirit; add to it while yet warm, ʒ iv. of iodide of potassium, dissolved in the same quantity of spirit, and let it cool *slowly* in wide-mouthed vials, well corked.

Pharmaceutical Transactions, No. 8, p. 416.

43.—COLLECTION AND PRESERVATION OF HYOSCYAMUS.

By Joseph Houlton, Esq., F.L.S.

I have known this plant of doubtful duration forty years, and have seen it growing in various parts of this country in its wild state. I cultivated it for several years in my garden, and from what I have seen I am quite satisfied that it is a biennial; and such is the opinion of the herb-gatherers with whom I have conversed on the subject. If there is, as some assert an

annual variety, it is rare as an indigenous plant. I wish those who call it an annual would give its habitat as such; I only know it as a biennial, which bears fine petiolated leaves in the latter summer months of the first year of its duration; the plants at this period are called by the gatherers seedlings; their leaves are very specious, and meet with a ready sale in the market: if carefully examined, they will be found to possess but little of the clamminess and fetid odour that belong to the true medicinal leaves; their footstalk is the positive characteristic of the first year's leaves, which are not fit for medicinal purposes. I have asked the gatherer why he carried about the seedling leaves; his answer has been, "A cos they like 'em better than t'others, cos there a'nt no stalk." These leaves die down to the root in the autumn, at which time the root has attained its mature state, and is in full possession of its poisonous properties. In the following spring the root sends up a curious tuft of small light green woolly leaves; a stem soon rises, plentifully furnished with leaves which have no footstalk, but closely embrace the stem; they feel clammy, and send forth a strong and unpleasant odour, very similar to that of the leaves of the black currant. These are the true medicinal leaves, and are in perfection when the plant comes into flower. I prefer them as soon as the first flowers open; the plant flowers in June; the period varying with the temperature of the season. Now to guard the practitioner in large towns, where he must depend upon the herb collectors for his supply, I would advise him to have the leaves brought to him on the flowery stem. On receiving the herb, if it should not be convenient to strip off the leaves at that time, the flowering heads should be cut off immediately, and the plants strewed separately, in a dry but not a dark place. These cautions are important, and are proved to be so both by physiology and experience. When the leaves are separated from the stem, they should be dried without artificial heat, as quickly as possible in the open air, on some waterproof substance; when they are a little dried, the midrib should be removed, which may be done with more facility than when they are quite fresh; at the same time the large leaves may be divided transversely, and as the drying process goes on, it is as well to have the leaves carefully rolled between the hands into small loose masses; when quite dry, they should be kept secluded from the light and the atmosphere. From hyos-

cyamus thus prepared, a tincture may be produced, after the form of the Pharmacopœia, that will be veritable, and seldom disappoint the practitioner.

Pharmaceutical Transactions, No. 8, p. 427.

44.—ON THE EXTEMPORANEOUS PREPARATION OF MEDICATED WATERS.

By Mr. Jno. Fordred, Ashford.

It being the constant practice of many druggists, but more especially of those resident in the country, to prepare the principal of their medicated waters extemporaneously, a few remarks on them may perhaps prove worthy of insertion in your columns.

The directions given in the Pharmacop. Londin., 1836, are to "carefully triturate a drachm of any distilled oil with a drachm of carbonate of magnesia, and afterwards with four pints of distilled water. Lastly, let the water be strained."

An improved method of preparing them was proposed some years since, by Mr. Palmer, now of Newgate Street, London, and was communicated to me by Mr. Davis, of Folkestone, the form for which is as follows:

℞ Ol. Essential., ʒ ij.; Cret. Præcip., ℥ j.; Sp. Vini Rectif., ℥ ij.; Aq. Destillat. Cong. j.

Rub the oil with the chalk, then gradually add the spirit, and when completely dissolved, pour in the water by degrees; let it stand three minutes, and filter through a *close* paper.

The improvement consists in the use of the creta præcipitata, and the addition of spirit. The advantages claimed in using the cret. præcip. are three.

First. Its ready deposition after the water is prepared, which is so rapid that it may be poured off clear almost immediately, and consequently will not choke the filter as the magnesia is apt to do.

Secondly. In causing some of the waters to be prepared, perfectly *bright* and *colourless*, which appears to be an impossibility when the magnes. carb. is made use of, and this is a point generally aimed at by those who prepare their medicated waters extemporaneously. This remark more particularly applies to the aqua pimentæ, cinamomi, and menthæ viridis.

Thirdly. On the score of the greater insolubility of the car-

bonate of lime over the carbonate of magnesia. Indeed, *that* may be said to be totally insoluble in distilled water, while we know *this* may be taken up in sufficient quantity to cause the decomposition of certain chemicals which are occasionally required to be dissolved in it.

I am sorry to say there are some druggists who substitute "aq. fontan." for "aq. destill.," a practice which cannot be too highly deprecated; if distilled water *cannot be procured*, filtered rain-water is decidedly the best substitute, and none other ought to be used. I have also seen it ordered in some private forms to add the water *boiling hot*. This, if any thing, is worse than the foregoing, as the greater part of the virtue of the oil must be vaporised by the heat of the water employed.

Pharmaceutical Transactions, No. 8, p. 413.

45.—PHLORIDRINE, A NEW MEDICINE.

[Phloridrine is a new medicine which is now very highly spoken of by French practitioners as a useful adjunct to our cinchona preparations. It has been used for some years in Germany, Poland, and France. It is extracted from the bark of the roots of the apple-tree and the wild cherry-tree, and is thus prepared: the bark of recent roots is boiled with water sufficient to cover them, for half an hour. This is poured off, and the same quantity is again used; these two fluids are mixed together, and at the end of six hours deposit the phloridrine in the form of a deep-red velvety-looking matter.

M. Lebaudy, the editor of the *Journal des Connaissances Médico-Chirurgicales*, says, "its efficacy is so decided that we cannot hesitate to class it with the most powerful febrifuges; and it has this advantage over quinine, that it never induces gastralgia."]

46.—YELLOW AMBER IN AN ANOMALOUS NERVOUS AFFECTION.

By M. Gerard.

[A female aged 37, unmarried, since the age of 20 has been attacked with a nervous disorder presenting peculiar symptoms. Many physicians had been consulted without success. M. Gérard had attended her nine years with no amelioration to her

symptoms, which appear to have been those of an intermittent hysteric chorea. M. G. used antispasmodics, leeches, mercury, and carbonate of iron; the two last were the only medicines affording her the least relief.]

"In 1838, I took an artificial magnet of the force of 250 grammes, and touched the patient without her being aware, the result was a terrible attack of her spasms.

In 1840, she was seized with a painful contraction of the lower jaw: I placed a mustard poultice on the leg, this drew away the irritation; the jaw became loosened, but the patient could neither move the leg, nor place it on the ground, without becoming convulsed.

The idea presented itself to me of trying an ideo-electric body; I requested an amber necklace, it was placed above the calf of the leg. The effect was that any part of the body from the head to the necklace might be touched with impunity, whilst below from the necklace to the toe, the least touch produced the convulsive action. The collar appeared to act as a complete barrier. The collar was taken to the thigh, then to the kidney, and lastly to the neck. When the collar was brought to the neck, I observed a marvellous change--one might touch the patient in any part without inducing the convulsive action; she was, in fact, cured. On taking off the collar she relapsed, but when it was put on again she was quite better. The quantity of amber required to prevent the least remains of her affection was 70 grammes. If the collar approached the lower jaw it lost its effect; it acted best when placed at the base of the neck, immediately above the clavicle."

[We might almost feel inclined to doubt the reality of the above case from its extreme singularity, but M. Trousseau, one of the editors of the *Journal des Connaissances Médico-Chirurgicales*, narrates a case presenting some similarity to this.—The patient, a married female, wae thrown into convulsions on the slightest touch, or on feeling any considerable odour. The face and hands were alone free from this peculiar morbid sensibility. There was one point of peculiar sensibility in the neck.]

SURGERY.

47.—ON LITHOTOMY AND LITHOTRITY.

By Edwin Lee, Esq., M.R.C.S., &c. &c.

[Mr. Lee has published an excellent paper on this subject in the Edinburgh Medical and Surgical Journal, for which the Jacksonian Prize of 1838 was awarded; and some practical remarks from this paper we will lay before our readers. On the comparative value of the bilateral and lateral operations for stone, he says:]

The lateral operation, which is the one almost invariably performed in this country, is superseded in France in some cases by the bilateral operation, which has not, I believe, been performed in England, and of which, as it is less generally known, it may not be out of place to say a few words. Chaussier first conceived the idea of avoiding the consequences which result from an extensive incision or laceration of the cellular texture around the neck of the bladder, frequently attendant upon the extraction of calculi by the lateral operations, by incising both sides of the neck of the bladder, so as to admit the extraction of stones, even of larger size, without the incision extending beyond the limits of the prostrate gland, or, at all events, without extensive lesion of the surrounding cellular texture. Beclard also acted upon this idea, and performed the bilateral operation several times; but it is to Dupuytren that its introduction into practice was principally owing. This celebrated surgeon preferred it almost exclusively during the latter years of his life; and in consequence of the succcessful results which he was stated to have obtained, it was pretty generally adopted by many French surgeons. This operation is in fact a modification of Celsus' method of cutting upon the gripe, but, instead of the operator introducing his fingers into the rectum to fix the stone, a staff very much curved and deeply grooved is passed into the bladder; a semicircular incision is

then made through the perineum, commencing midway between the tuberosity of the ischium and the anus at the right side, circumscribing this aperture, and passing an inch anterior to it, to terminate at the corresponding point on the left side; the membranous part of the urethra is then divided longitudinally, and the double-bladed *bistourie caché* is introduced along the groove of the staff into the bladder, its concave surface being directed towards the pubes; when within the bladder, the bistoury is turned round so as to make its concavity front the rectum; the blades then being pressed out (to the extent previously regulated by a scale at the handle varying from six to twenty lines,) and the instrument being withdrawn, an incision is made in the neck of the bladder and prostate, of a form corresponding to that of the integuments.

The chief advantages of this operation are, that it is better adapted to the easy extraction of large calculi, especially in cases of deep perineum, than is the lateral operation; a way being made for the passage of the stone at the widest part of the inferior aperture of the pelvis; and, as the incision at the neck of the bladder would not, in most cases, extend beyond the circumference of the prostate, the risk of urinary infiltration is much diminished. It exposes less than the lateral operation to the danger of wounding important arterial branches, though in the bilateral as in the lateral operation, considerable bleeding may ensue from the division of the veins about the neck of the bladder, especially in old persons; and this is, perhaps, more likely to occur by the former than the latter method, as they would be divided to a greater extent. On the other hand, there is perhaps more likelihood in this than in the lateral operation, of the rectum being wounded, as this part, particularly in old people, is often considerably dilated. This accident may, however, generally be prevented by the previous exhibition of an enema, and by the operator's depressing the bowel with the forefinger of his left hand, while making the incisions; but, even should it be cut, the wound would probably heal in most instances without trouble.

Some English surgeons, among whom is Mr. Liston, recommend, when the stone is of large size, that the incisions through the integument and cellular texture should be made the same as in the lateral operation; and, if the incision of the neck of the bladder on the same side be found insufficient to allow the

extraction of the stone, then to incise the prostate on the opposite side; thus combining the bilateral with the lateral operation. Where, however, the former appears to be indicated, I should conceive it would be better to perform it in preference to the above method, in which the outward wound being on one side, the traction in the removal of the stone must necessarily be made in that direction, and when a large stone is in the grasp of the forceps, would be more likely to occasion injury and laceration of the parts, than when the direction of the outward incision corresponded with that at the neck of the bladder. Besides, the majority of operators having once seized the stone, would not stop to make the second incision of the prostate, but would continue their attempts to extract it, and thus risk injuring the parts by the employment of an undue degree of force. In several trials which I have made on the dead body, and also in the demonstrations of this operation which I gave in England, the blades of the bistoury were expanded to the extent of from fourteen to eighteen lines, which admitted of the extraction of large stones from the bladder, and subsequent examination of the parts showed that the incisions had not extended beyond the limits of the prostate.

[It is, however, well known, that the success which has generally been attributed to the bilateral operation is not to be depended upon, owing to the erroneous reports which have been published respecting it, and more especially in France. The account of it in the *Dictionnaire de Médicine et Chirurgie* differs materially from those given by M. Civiale.]

The lateral operation may then be considered as the one most applicable to the great majority of cases where lithotomy is required, and must be regarded in a very different light according to the circumstances under which it is performed; both with respect to facility of execution, and as to its ultimate results. In favourable cases, and particularly in young subjects, the operation is generally terminated in a few minutes, not unfrequently in one or two minutes, and the patient is at once relieved of a disease, which, if left to itself, would occasion months or years of suffering, and cease only with his existence. After the operation, the wound in the bladder being at its lower part, the urine passes away readily; the contractile power of the organ is not materially impaired; there is comparatively

little risk of the urinary infiltration or the peritoneal inflammation, to which the hypogastric operation so frequently exposes; and in by far the greatest number of instances, the patient advances towards recovery without impediment. Notwithstanding these circumstances, however, the operation must always be regarded as one of the most painful and dangerous in surgery.

[When we remember that only a few years ago the operation of *Lithotrity* was but little pactised in this country—so little so, that Mr. Crosse, in his standard work on urinary calculi, says, speaking of the different instruments, "they are scarcely employed by any, save those who dedicate their time and attention almost exclusively to the undertaking," we cannot but be astonished at the rapid advances which have been made in this branch of surgery within the last five years. It is curious to observe the different improvements which have been made in the various instruments for this operation. It would be of little use here to enumerate them, or to go into detail respecting their merits. This has already been ably done by different writers. They may be ranked under four heads: "1st. Those with which the stone is first perforated with a view to diminish its force of cohesion, and then crushed. 2nd. Instruments for breaking calculi by means of percussion.—3rd. Those for effecting the same purpose by pressure. 4th. Instruments, by means of which, percussion may be combined with pressure."]

The instruments with which pressure may be combined with percussion are most usually employed at the present day, and are so perfectly constructed as to render their use much more easy and safe, in all the cases to which lithotrity is adapted. In form they resemble Heurteloup's percussor, of which they may be considered a modification; and though their diameter need not exceed that of a large-sized bougie, they are made sufficiently strong to break the hardest urinary calculi. The concave branch slides freely within the convex one; and thus admits of the employment of percussion, while by the addition of a screw at the handle, (acting by a fly in Weiss's, and by turning a button in Charriere's instruments) pressure may be applied. The teeth are small in these instruments, and are close together; the extremities of the branches are therefore as strong at one point as at another; the force employed telling

in great measure on the curve and straight part of the instrument. An important improvement has been effected within the last three or four years by Mr. Weiss, at the suggestion of Mr. Oldham, by which a serious inconvenience formerly attending the use of these instruments is obviated. This consists of an opening being made in the curved portion of the convex branch, which, without weakening the instrument, allows of the detritus being pressed through, as the stone is crushed, instead of becoming collected between and clogging the branches,—thus impeding their closure, and the consequent withdrawal of the instrument, which not unfrequently occurred before this improvement was made. In the curved instruments, however, used by M. Civiale, there is no aperture for the passage of the detritus, which is prevented from collecting between the branches, by a few gentle taps being struck with a hammer on the extremity of the concave branch after the stone has been crushed by pressure. After every two or three blows, M. Civiale separates the branches a little with the thumb of his left hand while holding the instrument, in order to allow the detritus to fall out; and in several operations which I have seen him perform, there has not been any difficulty in withdrawing it, though this would be very likely to happen in less practised hands. The extremity of the branches of this instrument is of a much more flattened form than those in general use, which M. Civiale considers more advantageous, as a larger surface of the stone is embraced, and the fragments resulting from its fracture are less angular.

After a stone has been broken by one of the preceding methods, a greater difficulty is generally experienced in dealing with the fragments, each portion having to be seized, and broken sufficiently small to enable it to pass away through the urethra. In order to obviate this inconvenience, Mr. Key very ingeniously caused to be added to the ordinary kind of lithotrite, a small net, which, when the instrument is open, is expanded by means of lateral wires. The net thus catches the larger fragments after the stone is crushed, instead of allowing them to fall into the bladder, and, being contracted by drawing the wires, replaces them within the grasp of the instrument, to be broken into small portions at one sitting. Though this apparatus has been successfully used by Mr. Key, it is of too complicated a nature, and too likely to become deranged, and

thus cause irremediable injury, ever to come into more general use. Even were it not exposed to these objections, it has, moreover, the great disadvantage of not allowing the surgeon to discontinue the operation, before the whole of the fragments are broken into pieces sufficiently small to pass through the meshes of the net, whatever be the state of the patient or the irritability of the parts; and it is well known by those who have paid most attention to the subject, that many of the accidents and dangers attendant upon lithotrity are attributable to the sittings being to much prolonged, when the surgeon has been anxious to terminate the operation in one or two sittings.

There is in general no difficulty in seizing a stone in the bladder with the two-branched lithotrite, after a few trials have been made on the dead body. The pelvis having been raised by pillows placed beneath it, and the bladder moderately distended by the injection of tepid water, the lithotrite should be introduced and the stone felt for with its convex surface as in common sounding. By raising the handle, and consequently depressing the curved portion of the instrument to the floor of the bladder, the stone will generally be pushed a little on one side. The lithotrite being then held steadily with the left hand, its concave branch should be drawn back with the right, and as the resistance is withdrawn, the stone, tending to revert to the medial line, will probably fall within the expanded branches. When the curved portion is not sufficiently depressed, though the stone be plainly felt, the attempt to seize it may fail, in consequence of the instrument being opened above it, as I have seen happen in several instances. If the stone should not fall within the branches, and is felt to lie on one side, it may generally be seized by rotating the beak of the instrument towards it, and even when lying behind an enlarged prostate, a stone may frequently be taken up by this means. As the shortness of the curve in these instruments admits of their being turned completely round, with but little pain or inconvenience, on the concave surface being presented downwards, and the inner branch being drawn back so as to open the instrument, the prostate is slightly advanced with it, thus very much facilitating the taking up of calculi, which would otherwise escape detection. When the stone is felt to be between the branches, it should be held firmly by the thumb of the operator's left hand pressing on the expanded portion of the

handle, if percussion is to be employed, or by turning the fly or button when pressure is preferred; the screw being then tightened till the stone is broken, or, if much force be requisite, and the assistance of percussion be deemed advisable, the screw may be removed by turning the knobs of the button in one of Charriere's instruments transversely, and a few sharp blows struck with a hammer on the extremity of the instrument. When the stone is broken or is felt to have yielded, the screw may be again applied, and the branches of the instrument brought into contact with each other. In most cases, however, percussion may be dispensed with altogether, and in many a very slight degree of pressure by means of the screw suffices to reduce the stone to fragments. This method is considered by most unprejudiced persons conversant with the subject, as infinitely preferable to percussion, as it is not so formidable an operation; is less abrupt in its action; does not require the assistance of a second person; is attended with less risk of injury to the parts, and breaks many calculi by gradually crumbling them down to a coarse powder or to small fragments, instead of at once dividing them into two or three larger portions, as mostly happens by percussion, which should be especially avoided when the bladder is much contracted, or where there is great irritability of the parts; but where the stone is hard and brittle, not yielding readily to pressure, percussion may be advantageously called in to its aid, and will in some cases very much facilitate the operation. When the stone is once broken, its fragments may generally be reduced to smaller portions by pressure alone; for which purpose it is frequently not even necessary to employ the screw, pushing the ends of the branches against each other with the hand being sufficient. For this part of the operation, as also for crushing small stones, the screw scoop and catheter forceps constructed by Weiss, may often supersede the employment of the lithotrite. These instruments are also well calculated to remove small fragments or detritus lodged behind the prostate. Injections of the bladder, either through the last named instrument, or through a large silver catheter, constructed for the purpose, the eyes of which are of considerable diameter, will also very much facilitate the expulsion of detritus.

Edinburgh Medical and Surgical Journal, Jan. 1842, *p.* 31—46.

[Both these operations have had their particular advocates. Mr. Lee, we think, very ably discusses the merits of each, and the circumstances under which the one or the other ought to be be preferred. Where the operator cannot decide on the preference of one to the other in any individual case, it will clearly be his duty to give the preference to lithotrity, as the other can be performed afterwards, in case of this milder operation failing to cure.]

Lithotrity may be considered as more especially suited to adults whose general health is good, and whose urinary organs are free from any other disease than the presence of stone; in whom the bladder is moderately capacious, not preternaturally irritable, and contains a single stone of small size, (as not exceeding the size of a filbert), and not excessively hard. A patient in whom these conditions are met with may be regarded as being under the most favourable circumstances for the operation, which in all probability would require but few sittings for its completion, without the occurrence of any of the more serious accidents which sometimes attend it. Nor are the instances in which all these propitious circumstances are united at all unfrequent; a large proportion of stone patients who apply to the surgeon for relief have, in fact, no disease but the stone, the presence of which is frequently not even manifested by the symptoms, but only becomes evident on sounding. It is true that a person under similar conditions is also in a very favourable state to undergo lithotomy, and would most probably recover; yet it must be borne in mind that, even in the most favourable cases, the mortality from lithotomy is great; that it is an operation of a most painful nature, and one of which patients entertain so great an apprehension, as not unfrequently to have a prejudicial effect on the result; that unexpected difficulties may arise during the operation, and accidents may supervene, compromising the patient's life; and that, even if every thing were to go on well, the patient must still be almost entirely confined to his bed, till the complete healing of the wound. Few surgeons, therefore, conversant with both operations, would hesitate in a similar case to recommend lithotrity; and even were the surgeon disposed to prefer lithotomy, many patients would decline adopting his recommendation, and would very likely apply to others whom they might think better able to cure them, without subjecting them to so formidable an operation.

Adults and elderly people, in other respects in the same conditions as those above specified, but in whom the stone is of larger size, as of a walnut, or from ten to fifteen lines in diameter, may also be considered in a favourable state to undergo lithotrity, though, of course, less so than when the stone is of smaller size. If instead of one moderate sized stone, the bladder contain two or three small ones, the patient is not in a more unfavourable state, as he would be no worse than if he originally had a larger stone, which, after a sitting or two of lithotrity, had been broken into as many portions. Even when the bladder contains several stones, lithotrity may still be applied, if there be no other counter-indicating circumstances, and the stones be of small size, though, if there was reason to believe they were numerous, lithotomy would perhaps be the preferable operation, on account of the length of treatment required by lithotrity, and the existence of so many cases of irritation, superadded to that of the frequent introduction and manœuvring of instruments. Here, however, the degree of irritability of the parts and other circumstances must be taken into the account to guide the surgeon in his choice, as, though he may be aware that the bladder contains more than one stone, he cannot always be as certain that it contains several. In these cases, also, the tendency to the re-formation of calculi must not be lost sight of. This, indeed, would be one reason for preferring lithotrity, if other circumstances were not unfavourable to its employment, as a patient in whom this predisposition is strongly manifested would, even after lithotomy, very likely require another operation ere long, and this could not, like lithotrity, be repeated several times in the same person.

Lithotrity has been objected to in these as also in the simpler cases where the bladder only contains one stone, on the grounds that one or more of the calculi or fragments are liable to be left behind, after the operation is terminated. This, it is true, has occurred in several instances, and in some patients who were supposed to have been cured, but who afterwards died of the disease, an examination of the parts has exhibited the formation of fresh calculous depositions around the fragments of calculi which had been broken by lithotrity. Where also the sittings of lithotrity are obliged to be suspended for any length of time, the fragments very often become covered with a fresh coating of the phosphates. One of the first patients

lithotritised at the Hôtel-Dieu, a short time after he had been dismissed as cured, returned as ill as before, though when he left the hospital he had none of the symptoms of stone, nor could any remains of the foreign body be detected on sounding. This accident, though more likely to happen, is not peculiar to lithotrity, but may also occur after lithotomy, where the bladder contains several calculi, or where a stone is broken in attempting to extract it. When, however, after proper explorations of the bladder, no more calculi or fragments can be felt, it is fair to conclude that none exist. Even should any escape detection by being lodged in a fold of the bladder or otherwise, lithotrity should not bear the blame, as it can only attack what is tangible, and in many of the cases, where a calculus is again felt in the bladder some time after the performance of lithotomy or lithotrity, and the patient was considered to be cured, it is just as likely, or more so, to be the result of a subsequent descent from the kidneys, particularly when there have been several calculi, which indicates the great predisposition to their formation.

When the stone is of considerable hardness, but of small size, lithotrity is applicable with great prospect of success, and, if there be no counter-indicating circumstances, should generally be preferred to lithotomy. The hardness of the stone (if it be small) need not, as formerly, prevent the performance of the operation, which will, in these cases, often be facilitated by the assistance of percussion, though the present improved instruments are able to break, by means of the screw, the hardest urinary calculi, without the danger of their giving way. When, however, there is reason to believe that the stone is of larger size, as above twelve or fifteen lines in diameter, and that it is at the same time of great density, lithotrity would be attended with much more risk, and lithotomy would, in most cases, be the preferable method, especially if the symptoms of the disease be severe, and there exist much irritability of the bladder, on the passage of instruments. The hardness of a stone, though very unfavourable for lithotrity, is not so for lithotomy, but rather the reverse, as, when once the bladder is opened, it would be more easily extracted than a softer one, which might break by the pressure of the forceps, and would necessitate their more frequent introduction, with the risk of a portion being left in the bladder.

In proportion to the increased size of the stone beyond a certain point, as from twelve to fifteen lines in diameter, (due regard being always paid in estimating this circumstance to the relative capacity and irritability of the bladder) the case is more unfavourable for lithotrity, which is altogether unsuitable to very large calculi. In some cases, however, of large calculi (as of the size of a hen's egg) chiefly composed of the phosphates, and consequently more friable, lithotrity might still be preferred to lithotomy, which, in these cases, is not unfrequently counter-indicated; or its performance is attended with the greatest risk, on account of the diseased state of the urinary or other organs; consequently lithotrity, though performed under very disadvantageous circumstances, would afford the best chance of relieving the patient of his disease, and should be had recourse to, if the condition of the patient admitted of its application, with a likelihood of success.

The smaller, therefore, and the more friable the stone—other circumstances being the same—the more favourable is the condition of the patient for lithotrity. Some calculi are so soft as to break on the slightest touch, or fall to pieces spontaneously, forming a sort of mortar in the bladder. For these the lithotrite need not be used, as they would be better removed by the scoop catheter and injections of the bladder.

[The preceding observations chiefly respect the nature of the stone to be extracted, but even still more important circumstances are to be well considered before having recourse to either lithotomy or lithotrity. The condition of the parts in question are to be carefully examined. In the first place a *narrow urethra* must always be an obstacle to lithotrity, although the recent improvements in the instruments used may, in some measure, obviate this difficulty. A contracted urethra will not only prevent the proper instruments being easily managed, but also will prevent the ready escape of the fragments afterwards. The same may be said when *stricture* is the cause of the contraction; although this may generally be remedied before the operation. "When co-existing with stricture, other states unfavourable for lithotrity are met with, as a largish or hard stone, a contracted or diseased state of the bladder, great irritability on the passage of instruments, or enlargement of the prostate, lithotomy would in most cases be preferable, and,

if successful, would at once relieve the patient of his stone, and at the same time of his stricture." When the urethra is more closely bound up to the symphysis pubis than usual, the curve is much increased, and of course will prevent the free use of instruments which are inflexible and comparatively straight: for even the curved instrument which is now often used, does not remedy this difficulty, the curved part being exceedingly short, and entirely within the bladder during the operation. "Enlargement of the prostate, especially of its middle lobe is also a common cause of increased curvature of the urethra, and may exist to such an extent as to render lithotrity impracticable with safety." At the same time an enlarged prostate is equally a cause of danger in lithotomy, not only from the increased depth of parts between the skin and bladder to be cut through, and from the incision being made through a part morbidly altered, but also from the enlargement being so frequently complicated, especially in old people, with disease in other parts.

"*A contracted and thickened bladder,* is also a very unfavourable complication." In this case both lithotomy and lithotrity would be dangerous. When the symptoms are very urgent, and the bladder in a high state of irritability, lithotrity would greatly add to the evil, and ought not to be performed unless the advantages preponderate in other ways, such as the stone being small and soft, in which case the sittings ought to be short, and sufficient time ought to intervene between each operation. It frequently happens, however, that the irritability of the bladder diminishes instead of increasing, by a repetition of the operation, the bladder becoming more accustomed to the irritation. If to this state of irritability of the bladder there be added a state of subacute inflammation, lithotomy would be inadmissible, and if the patient *must* be relieved of the stone, lithotomy would be the preferable operation, and especially if the state of inflammation were kept up by the stone: but if the inflammation were decidedly of a *chronic* character, unaccompanied by much pain or irritability of the bladder, but attended with a copious secretion of ropy mucus, although an unfavourable complication, lithotrity would be preferable to lithotomy, as the stone in these cases is generally composed of the phosphates, and is soft and easily reduced to fragments.

Sometimes atony, or even paralysis of the bladder exists in

old people, and has been advanced as an objection to lithotrity, on account of the patient not being able, after the operation, to empty his bladder and get rid of the fragments; and, moreover, in these cases, the stone often arrives at a considerable magnitude before it causes great irritation. In such a case, if the stone is supposed to be of considerable size, and the prostate gland enlarged, lithotomy would be preferable: where, however, the atony of the bladder is not complete, lithotrity would often be preferable to lithotomy, always taking care to regulate the sittings by the circumstances of the case, and to bear in mind, that the bladder, by not being particularly irritable, is not that safe monitor to the operator which it is in other cases. Abscess, ulceration, or fungous growths of the bladder, as evidenced by the passage of blood, pus, &c.. would of course render any operation inadmissible; unless we had good reason to suppose the blood or pus to come from one of the kidneys, the prostate, the perineum, or the surface of the urethra.

If organic disease exist in any other part of the body, it would render any serious operation unfavourable, especially that of lithotomy,—in these cases lithotrity might be of service.

The preceding observations apply chiefly to adult males or those above puberty, but a great many cases of stone occur in children below ten or twelve years. In these cases lithotrity is not advisable, on account of the narrowness of the urethra, and the length of time which would be occupied in the treatment; the fragments being required to be broken down more completely than in the adult whose urethra is wider. Other serious objections likewise exist, as the great susceptibility of the nervous system and irritability of the parts. In young children, therefore, lithotomy is generally preferred, for a variety of reasons. Mr. Lee ends his truly admirable paper by the following conclusions:]

1stly, That lithotomy is still, in the present state of the art, the operation most suited to the majority of cases of stone in the bladder; inasmuch as about one-half of the number of stone patients, consist of children to whom, with a few exceptions, it is more particularly adapted.

2dly, That, as far as adults and elderly persons are concerned, lithotrity is most applicable to an equal, if not to the greater, number of cases.

3dly, Lithotrity is preferable in the great majority of female cases.

4thly, Other circumstances being favourable, lithotrity is more especially suited to calculi of small size, even when hard.

5thly, Lithotrity is less applicable than lithotomy to most cases, where the bladder contains several calculi, especially if they be hard.

6thly, Lithotomy is the preferable, and often the only admissible operation, in cases of large calculi; as also in those cases where the stone, though only of moderate size, is yet of considerable density, and irregular on its surface, as in the oxalate of lime variety.

7thly, Where there exists much irritability of the urethra and bladder, which cannot be allayed by preparatory treatment, lithotomy would be the preferable operation; especially if the irritability appeared to be chiefly dependent upon the presence of the stone.

8thly, Lithotrity is applicable in some cases of deranged health, or disease of parts, which would counterindicate lithotomy, or would render its performance most likely to be attended with failure.

9thly, The degree of pain from the performance of lithotrity is not great in many cases, and is mostly diminished after the first sittings; but, on the other hand, in some instances, the operation is very painful, and the pain becomes increased in subsequent sittings, though, perhaps, never so acute in lithotrity as in lithotomy, yet, as the pain in the latter operation lasts only for a few minutes, whereas in the former it recurs, though less in degree, on each sitting, the patient frequently suffers by lithotrity a greater amount of pain.

10thly, The duration of the treatment is generally longer by lithotrity than by lithotomy, though sometimes it is shorter; and after the stone has been removed by the latter operation, the patient, though confined to his bed, may, during the greatest part of the period. be considered as convalescent; whereas, when lithotrity is performed, there is always risk, so long as any fragments remain in the bladder, of circumstances arising to prevent the completion of the operation, and the patient cannot be regarded as out of danger.

11thly, When lithotrity is applicable, the method by pressure is, in the great majority of cases, infinitely superior to that by percussion.

12thly, Lithotrity exposes more to the risk of a relapse than lithotomy, on account of the greater probability of a portion of stone having escaped detection, and remaining in the bladder after the operation.

Lastly, Sufficient data do not as yet exist whereon to form any accurate estimate of the average amount of failure, and mortality after lithotrity; the accounts hitherto furnished being of a very contradictory nature; some representing lithotrity as more successful in its results than many slight operations; others stating the number of failures to be very great. The circumstance of several unsuccessful cases which were not adverted to by the operators, having been subsequently brought to light, both in England and on the continent, tends very much to discredit some of the statements of success which have been made; though, as far as the results are concerned, much must depend upon the operators being accustomed to the use of the instruments, and knowing when to desist from persevering in the attempts; as also upon the selection of proper cases. It is, however, satisfactory to know, that, since the instruments have become more simple and perfect in their construction, and the operation better understood by the generality of practitioners, the proportion of failures is much less than at an earlier period.

Ibid, April 1842, *p.* 296—324.

48.—ON STRICTURE OF THE URETHRA.

By Arnott, Wade, Cooper, Arntzenius, &c.

[An able article in Dr. Forbes's review, presents to us an epitome of the most modern views on the nature and treatment of stricture of the urethra, which we will endeavour to condense. The works of Arnott, Wade, Cooper, Arntzenius, and Franc, form the bases of the following observations.

Arnott describes the anatomy and relations of the urethra, but omits to dwell on the different relative positions which it assumes in infancy, and childhood, and the adult period.]

The bladder is a moveable viscus, and its relation to the arch of the pubes, (to which its membranous portion only is fixed by the triangular ligament,) is constantly varying from the condition of the surrounding viscera, and from the influence of age. In the fœtus the bladder is placed almost entirely in the

abdomen, and above the pubes, the pelvis not being, as yet, sufficiently developed to admit of its descent. The rectum at this period, distended with meconium, and filling the whole of the imperfectly formed pelvis is another obstacle to the descent of the bladder to the position it subsequently occupies. As the bones of the pelvis acquire with age an increase of size, and become more and more developed, so the bladder is found lower and lower in the pelvis, till, in old age, it is even in a moderately distended state almost totally concealed behind the bones of the pubis. These anatomical facts show that Dr. Arnott's description of the opening of the urethra into the bladder can only relate to the earlier periods of life; in adult and old age, there is always a pouch of greater or less size formed behind the urethral opening into the bladder.

So well aware was the late M. Dupuytren of this situation of the bladder in infancy, and at the earlier periods of life, and also of the occupation of the pelvis by the rectum at this age, that he used to give the following directions as necessary to be observed in the performance of the lateral operation for lithotomy in young children: It results from this disposition, that if a knife is attempted to be plunged into the bladder, or drawn from it in a horizontal direction, the instrument will, in the first instance, pass between the bladder and the rectum, and penetrate the latter; and in the second, after having divided the neck of the bladder, and prostate, at this period very small, the instrument wounds the intestine longitudinally. From which it is easy to conclude that, in order to avoid the rectum in children on whom the operation for lithotomy is performed in the ordinary situation, it will be necessary to give to the knife a direction parallel to that of a line which, setting out from the umbilicus, shall terminate at the tuberosity of the ischium of the left side; and consequently, that the handle of the instrument must always be more depressed, and the point more raised than in the adult.

Hunter, it is well known believed that strictures were never produced by gonorrhœa. Many modern surgeons, as Abernethy, Sir E. Home, Desault, and others, believed and taught that strictures were generally produced by the employment of injections during the inflammatory stage of gonorrhœa. We have no hesitation in confidently declaring that we are much more likely to expose our patient to the chance of stricture by

totally omitting the use of injections in gonorrhœa than by their judicious employ. The quicker a gonorrhœa is cured the less likely are we to have stricture follow it. Gonorrhœa is a disease whose ill consequences are in a direct ratio with the period of its continuance. Cure it quickly if you can, but at the same time cure it completely. If a spot of chronic inflammation remain, however trivial it may appear in the commencement, it will slowly thicken, and destroy the elasticity of the urethra.

[Stricture is generally treated by simple dilatation, dilatation by fluid pressure, or by the bougie armed with the potassa fusa, or the nitrate of silver. Each of these varieties of treatment is useful in particular cases. The bougies used by Dr. Arntzenius for the purpose of exploring the urethra are made of "a strip of parchment rolled up so tightly that its layers adhere pretty firmly to one another, and which has at one end of it a knob or drop of glue made of boiled parchment. This knob contributes very much to the facility of introducing the instrument into a stricture; one can feel it slipping in; and then, by the heat of the urethra, it melts and the bougie unrolls of itself, while the melted glue is retained without injury to the urethra, and does not possess the slightest degree of any irritating quality. Such instruments may be manufactured of very small size and yet possess sufficient strength; and their unrolling is rather advantageous than injurious, in consequence of the slow dilatation to which the stricture is thus subjected."]

Their cheapness is mentioned by the author as an additional recommendation of these bougies, and this is not an unnecessary quality, since in general each can be used only once. Whether they deserve all the praise bestowed on them experience only can decide; to those who are disposed to try them we can give our evidence that the author does not seem one accustomed to speak rashly or to recommend unjustly, and that in general the bougies with knobbed extremities, so highly commended by Sir Charles Bell, are, of all, the most useful for the purpose of exploring the urethra, whatever M. Ricord may say to the contrary.

There are three modes in which the treatment of dilatation may be performed: the first, which is most commonly practised in this country, is that of gradual dilatation by bougies of vari-

ous kinds, the size being slowly increased. The second is the forced dilatation of Mayer and Lallemand, to which we need not more particularly allude, its dangers being such that it is not likely to be practised by any prudent surgeon in this country.

[Dr. Arntzenius depends chiefly on simple dilatation with bougies, but the length of time occupied in his treatment must be an objection with many; and especially when the urethra is exceedingly sensible and irritable; and moreover, when the stricture is indicated, "the use of bougies will only procure a certain amount of benefit. In these, the most useful means are, bougies with their ends smeared with nitrate of silver or corrosive sublimate."]

In proposing the employment of dilatation by fluid pressure, Dr. Arnott passes in review the inconveniences and evils likely to arise from the use of the simple bougie. In noticing the rationale of the mode of cure effected by these instruments he contends, and we think with great reason, that the cure is seldom permanent. The first effect of the introduction of a bougie sufficiently large to pass through a permanent stricture is violent distension of the diseased part of the urethra, which, if the instrument can be left in the canal, gradually diminishes by dilatation or absorption taking place; so that at last the instrument remains in the canal without any distending action. "After this its longer continuance in the passage can be of little avail, but may prove hurtful by the irritation excited. In curing strictures by the bougie, it often happens, from the increased tendency to contract, that, in the intervals between the introduction, whatever is gained by one is nearly lost before the succeeding, and this interruption to the process of distension, with the irritation produced by the so frequent passing of an instrument, is sufficient to account for the ordinary tediousness of the cure." To obviate, in some measure, the evils attendant on the use of bougies of a fixed size, surgeons have had recourse to the employment of instruments composed of substances which swell by heat and moisture, and thus become enlarged when suffered to remain for a certain time in the urethra; tents made of sponge, and bougies manufactured of catgut, leather, &c., &c., have been devised for this purpose. Dr. Arnott's fluid dilator was constructed with the same views,

viz., the capability of being enlarged when passed into the strictured part of the urethra.

Dr. Arnott states that a dilator for the cure of strictures should be of little bulk, and of easy introduction, and should be made capable of assuming and retaining any shape and magnitude when in the urethra; it should also be capable of exerting a distending force to any degree, and always under control. Such are the properties and advantages assumed by Dr. Arnott for his fluid dilator. It consists of "a tube of oiled silk, lined with the thin gut of some small animal to make it air-tight, and attached to the extremity of a small canula, by which it is distended with air or water from a bag or syringe at the outer end, with a stop-cock or valve to keep the air or water in when received."

For the particular description of the whole apparatus, we refer the reader to Dr. Arnott's treatise.

"The only part of the preparation of the dilator requiring nicety of execution, is the attachment of the distensible tube to the conducting tube and wire, which must be at once very neat and very secure. The silk tube and lining gut should be tied on together, the artist taking care that the wire be kept exactly in the axis of the tube, or that the wrinkles or folds at the extremity be equal all round. The tyings may be made conical by notching the extremity of the silk, after two or three turns of the small strong waxed silk thread have been made round it, and then by continuing the thread completely over it. The tyings should then be smoothed by a coating of bougie wax, and if unvarnished silk has been used, the operation is completed by covering both the silk and the tyings with a bit of gut. The secure attachment of the distensible tube to the canula and wire is a matter of great importance; for, should the silk become detached in the canal beyond the stricture, it might happen that the combined action of the urethra and flow of urine would not be able to expel it, until the stricture were fully dilated; it behoves therefore the instrument maker and the surgeon, to be careful that there exist no such hazard." (pp. 227-8.)

The distance from the orifice of the urethra of the stricture to be dilated must be first measured by a soft wax bougie, passed through a canula, which being gently pressed against the anterior surface, and opening of the stricture gives, on being

withdrawn, an exact representation of the diseased part. This bougie, Ducamp called his "*sonde exploratrice.*"

The dilator is now to be passed into the stricture, its presence within it may be known by the distance of the stricture from the orifice of the meatus, (previously measured by the soft bougie,) and the peculiar sensation experienced by the passage of the knobbed extremity of the central wire through the compacted and uneven portion of the urethra. Dr. Arnott sometimes introduces the dilator through a canula. As soon as the bag is sufficiently within the stricture, as much air is to be injected into it as the patient can easily bear; and during the time it remains in the urethra, the future admission or escape of the air is regulated by the sensations of the patient; that is, if the feeling of distension abate, more air may be injected, but if it should increase into pain, a little of the air may be allowed to escape.

Dr. Arnott enters largely into the evils and inconveniences arising from the use of ordinary bougies, whether by forced or gradual dilatation; and contrasts them with the advantages held out by the fluid dilator, both to the patient and practitioner. We must confess that the argument appears to us in favour of Dr. Arnott, and we are only sorry that a more extended practical application of his remedy has not been made. This we apprehend, must arise from a fancied difficulty either in the preparation or employ of the instrument. Ducamp was eminently successful in the application of his dilator, and we cannot understand why the same application has not been made of the original invention in this country. There is one evil to which we are afraid the fluid dilator is liable, although this may be avoided by limiting the size of the dilator when fully distended, and being extremely careful in the application of the distending force. The accident to which we refer is rupture of the urethra; one case is even related of it by Dr. Arnott, in which the application of the principle was made by the patient himself, "who in 1834 employed the dilator invented by Dr. Arnott; from which considerable relief was obtained. In 1841 finding the disease had returned, and that the stricture had nearly closed up again, he attempted to use the dilator himself, and in doing so, had the misfortune to burst the urethra, and thus break a passage into the rectum." We suppose in this case, the stricture was in the membranous portion of the

urethra, and we must say that in instances where, in this situation, stricture exists, and the elasticity of the walls of the urethra are destroyed, rupture of the urethra from the employment of the fluid dilator is not unlikely, without the greatest caution, to occur.

The next mode of treating strictures is by the application of armed bougies to the diseased portion of the urethra. Mr. Wade revives the practice of Mr. Whateley, namely, the use of bougies armed with potassa fusa. This practice, very successful in the hands of the latter surgeon, had fallen into disuse, but has been again employed, and apparently with success, by Mr. Wade. The cases in which the potassa fusa may be employed with hope of success are, according to Mr. Wade, hard fibro-cartilaginous strictures, impervious to instruments without the employment of injurious pressure; hard strictures of long standing, which, although admitting the passage of a small bougie, bleed freely on its introduction; irritable strictures; spasmodic strictures, not arising from acute inflammation of the urethra; and strictures which have a marked disposition to contraction. In order to observe the effect of the potassa fusa, on strictures of the urethra, Mr. Wade applied it, in the same manner as in stricture, to hard spots upon the tongue, caused by slight thickening of its mucous and submucous tissues. "The part in immediate contact with the potash quickly changes to a deep brown, surrounded by a small circle, and a little bloody serum oozes out. For two or three days afterwards the surface has a whitish appearance, and, at the end of a week or less, usually looks quite healthy; no ulceration ensues."

Mr. Wade concludes that the caustic potash acts beneficially upon strictures: first, by its dissolvent powers; secondly, by promoting absorption, and stimulating the congested vessels to contraction; thirdly, by relieving irritability and inflammation.

Mr. Wade believes the potassa fusa to possess great superiority over the argenti nitras in opening a stricture. It does not occasion a slough, and hence the painful sensation produced by the urine passing over an ulcerated surface is avoided.

The following directions are given by Mr. Wade for the employment of this remedy:

"Before using the potash, a bougie should be passed down to the stricture, that its distance from the orifice of the urethra may be correctly ascertained. A small piece of potassa fusa

should be inserted into a hole made in the point of a soft bougie; the eighth part of a grain is the smallest and a grain the largest quantity I am in the habit of using; but it will be rarely necessary to exceed the sixth of a grain. It will be well to make two notches on the bougie containing the potash; one marking the exact distance of the stricture, the other an inch beyond; as, very probably, on introducing the armed bougie, the first mark may be concealed within the urethra, from the penis being more stretched than when the measurement was taken. The bougie must be well mounted round the potassa fusa, so as to prevent the alkali from projecting; and it should be so placed, that it may be more applied to the upper than the lower part of the stricture for obvious reasons, Armed bougies should be well rounded at their points, to guard the urethra from the action of the potash before it reaches the stricture. In very bad cases it may be advisable occasionally to use the potassa fusa in the recumbent position, as it will then not only be the best applied to the surface of the stricture, but be most likely to penetrate its texture, which, in old and hard obstructions, is very desirable. . . To impervious strictures, from 3 to 4 are the sizes of the bougies I generally employ when using the potassa fusa; and to such as are pervious, they should be used of a size or two larger than the obstruction which the point of the instrument should penetrate. The armed bougie must be rapidly passed down to the stricture, and held against it with gentle but steadily continued pressure, for one, two, or three minutes, according to the nature of the obstruction, which, if very irritable and readily bleeding, the shortest time, or even less, should be at first selected as the most prudent course."

In ordinary cases this remedy may be applied every second or third day. In irritable strictures it may be well to allow four days to elapse between the applications. All the irritation produced by one application must be allowed to subside before a second is resolved on. "The potassa fusa should be kept in a phial with a ground-glass stopper. It should not be broken till required for immediate use."

According to Dr. Arntzenius, in cases of strictures absolutely impervious, the practitioner has always four methods from which to choose, namely, the forcible catheterism of Dessault and Boyer, the forcible injections of Amussat, the puncture of the

bladder, and the cutting into the urethra behind the stricture. Against the first, objections cannot, he holds, be too strongly stated; it is always a dangerous, often an unsuccessful, and sometimes a fatal proceeding, and the chances must always be that more harm will be done by it than good. The violent injection of warm water can be useful in very few cases, and even in the very rare instances for which (imagining them to be common occurrences) the plan was originally invented, namely, those in which the strictured part is completely closed by a lump of mucus, the injection of water is not preferable to the introduction of a bougie, but commonly produces more pain. The puncture of the bladder above the pubis is at once the easiest and the safest operation; its danger has been much exaggerated, and it is most probable that the deaths that have followed its adoption have resulted not from its effects, but from its not having been performed sufficiently early. The puncture through the rectum is preferable to it only in the few cases in which the bladder lies very deep and far back; and the puncture through the perineum should be adopted only when effusion of urine has already taken place. The last mode of operation, by cutting into the urethra behind the stricture, is peculiarly adapted to cases in which the retention depends on obstruction by foreign bodies in the canal, or in which the urethra is manifestly very much dilated behind the stricture; but in others, the uncertainty of finding that portion of the urethra which is to be cut into, and of finding it sufficiently healthy for the introduction of an instrument, form important objections to this method. (Arntzenius, pp. 378-83.)

The propriety of these conclusions is now proved, we believe, by the experience of the best surgeons.

"It must," says Mr. Cooper, "be continually borne in mind, that all danger is not obviated by the avoidance of force; for the gentle use of the instrument may produce equally bad effects if it be injudiciously handled. On first examining the stricture, either a silver catheter or a bougie may be used for the purpose of ascertaining its seat and condition. No. 6 is the best-sized instrument for this object; it is nearly of the size of the urethra, and is much less likely than a smaller one to get entangled in the lacunæ of the canal. When the instrument is first passed down to the stricture, gentle pressure should be exercised, and, if its passage be resisted, should be continued

for a few minutes. If the obstruction be owing to muscular spasm, continued pressure of three or four minutes will be sufficient to overcome the contraction; if, after that time, however, the obstacle does not yield, its persistence evidently depends upon the density of an adventitious deposition. When, in such a case, no great pain is experienced by the degree of pressure hitherto employed, and no bleeding occurs, force may be used to the full extent considered safe by the surgeons; but if this is still ineffectual, no further mechanical means should be had recourse to, (unless the bladder be much distended and the symptoms of retention urgent,) but leeches to the perineum and a purgative draught should be prescribed. It generally happens, in cases of no very long standing, that benefit is at once derived from this treatment; and I have frequently seen the patient recover after it had been adopted for three or four alternate days; but in cases of older date, great difficulty of micturition is often found to remain, in spite of it. To combat this symptom, the application of the bougie should be continued; as it is now ascertained that the difficulty of directing the instrument into the bladder depends upon the density of the stricture, and not upon muscular contraction. A new indication now therefore presents itself, namely, the removal of the adventitious matter; this is most readily effected by maintaining an equable degree of force on the surface of the stricture, which induces inflammation and softening down of the newly-formed substance. In the course of a few days, suppuration will be found to have been set up; after which, five or six repetitions of the application of the instrument will be sufficient to effect its passage through the obstruction; and thus will be performed a cure of stricture in what I may term its second stage.

"It is in this second stage that the precaution which I have alluded to above is necessary; for it is requisite to be as cautious with respect to the precise direction given to the instrument when thus gently applied, as when force is used to push the catheter or sound into the bladder; inasmuch as, without proper attention to the direction of the instrument, a false passage is as likely to be produced in the one case as in the other. This I shall shortly be able to show by relating cases in point. If gentle pressure be repeatedly made against the sides of the urethra, instead of upon the stricture itself, the mucous membrane naturally yields to the continued pressure of the instrument, and a

new passage is gradually produced, which by violence is frequently effected at once. When an opening has thus been formed in the urethra, it is not a necessary consequence that any train of symptoms should at once point out the error which has been committed. On the contrary, from the comparative facility with which the instrument passes onwards towards the bladder, the surgeon fancies, at first, that he has overcome the true source of obstruction, and indeed frequently succeeds in reaching the bladder with his instrument, having pushed it again into the urethra or through the prostate gland: a flow of urine then ensues, which gives him reason to suppose that the cure is complete. On the other hand, however, the urine is sometimes extravasated, as soon as the false passage has been made; and abscess is formed in the perineum, and all the symptoms follow inseparable from such a state of things, requiring, at once, the laying open of the perineum, and the evacuation of the extravasated urine; and leading to the abandonment of the gentle mode of treatment, for the cutting through of the permanent stricture."

British and Foreign Medical Review, April, 1842, *pp.* 312-323.

49.—TREATMENT OF INJURED INTESTINE FROM A BLOW UPON A HERNIAL SAC.

By C. Aston Key, Esq., Surgeon to Guy's Hospital, &c.

[Accidents of this kind usually occur either by a direct blow, or by the person being forced against some hard body.]

The extent of injury which the intestine sustains will vary according to the violence of the blow. The contusion may be insufficient to burst the bowel, or to occasion such a lesion of tissue as shall end in gangrene, its effects being only inflammation of the coats of the intestine; or the violence may be such as at once to rupture the intestine; or, failing to rupture the bowel, the contusion may be so severe as to be followed by sloughing and escape of fæces. These three states require distinct consideration, as the treatment required for each necessarily varies.

The mildest form of injury which a blow inflicts on a hernia is analagous to the contusion of other soft parts. The smaller

vessels of the mucous and other tissues being ruptured, pour their contents into the reticular membrane, and thus gorge it with extravasated fluids. Such contusions, it is probable, are not followed by any serious consequences: the fluids will be quickly absorbed, the mucous lining and the serous covering of the bowel remaining free from inflammation: neither will there be any symptom to lead to the suspicion that the bowel has suffered, beyond a certain degree of inaction in the muscular coat, giving rise to temporary constipation. Collapse, vomiting, and abdominal tension, are wanting, to give a character of severity to the injury.

The two first indications that immediately force themselves on the surgeon's attention, are, the necessity of returning the contents of the hernial sac, and obtaining free evacuations from the bowels. To the former of these proceedings there can be no objection, as the vitality of the bowel is scarcely endangered: and if it were left in the sac, adhesion might form between the injured bowel and peritoneum, that would afterwards interfere with its return into the abdomen. The administration of purgatives ought to be wholly abstained from, notwithstanding the confined state of bowels usually consequent upon an accident of this nature. A bruised bowel is placed by nature in a state of rest: the exhaustion of the nervous energy of the part diminishes in the muscular tissue the disposition to contract. Such inactivity of the bowel should be encouraged, and not thwarted by irritating purgatives. The safety of the bowel depends on the non-occurrence of inflammation; but if, by undue interference, the bruised structure is hurried into a state of inflammation, sloughing or ulceration will probably be the result. Beyond an occasional enema, to unload the larger intestines, nothing need be done. Opium may be required, if pain come on, indicating peritonitis; and if joined with calomel, care should be taken that the action of the former should preponderate, in order to prevent the probability of stimulating the bowel. Food should also be given in the smallest quantity, and in a fluid form, that little or no feculent residue may remain, to oppress the part. In this respect, nature is our guide: vomiting, which usually ensues immediately after the accident, empties the upper part of the canal; and the little desire that the patient feels for food, prevents, if nature be allowed her own way, any chance of repletion. Thus the part is placed in

a state of repose; and the circulation soon regaining its healthy condition, the functions of the intestine are restored.

The necessity for repose in an injured state of bowel it would be well to bear in mind, after the operation of strangulated hernia. The bowel is gorged by the strangulation, bruised by the taxis as it is too often practised, or inflamed by long incarceration in the sac. An intestine in such a condition cannot but be injured by an early administration of purgatives, which irritate and inflame the bowel, or exhaust what little remains of vital energy. After the operation, some time for repose should be allowed, before the bowel is called into action: the surgeon's anxiety to procure stools, should yield to the evident necessity for time being allowed for the restoration of the natural powers of the injured bowel.

If the contusion be so severe as to destroy the vitality of the bowel without rupturing it, the condition of the patient, both immediately after the accident and for several days subsequently, sufficiently attests the severity of the lesion which the part has sustained. The hernial sac is usually found filled with the injured bowel; but the absence of distension serves to distinguish it from a state of strangulation. The integuments appear to be bruised, though sometimes but slightly. The part is very tender when handled, but feels soft and pliant; and very moderate pressure is sufficient to reduce the contents of the sac.

The shock which the nervous system receives, is followed by a feebleness of the circulation, a corresponding pallor of the whole surface, and a sense of syncope. This condition is however only transient: re-action almost immediately ensues; the patient passing from the state of collapse, and gradually rising into a state of inflammatory excitement, as the injured bowel becomes the seat of more or less inflammation.

The speedy recovery of the patient from a state of collapse, quickly dissipates the suspicion of a rupture of the intestine; and the surgeon usually endeavours to replace the contents of the hernial sac as soon as re-action takes place. To this proceeding there is no objection, if it be done with gentleness. The danger of abdominal extravasation will not be increased by replacing the injured bowel at the neck of the sac: for should sloughing of its coats ensue, the slough may be walled in by adhesion of the surrounding peritoneum, and fecal extravasa-

tion be prevented; or, should this salutary process of adhesion fail to insulate the slough, the sac will receive the fecal matter, and quickly give intelligence of the impending mischief, by the tumefaction that will ensue within the scrotum.

The symptoms that arise in this state of things, in some points, resemble those of a strangulated bowel. The rejection of food from the stomach, the difficulty of obtaining stools, the tense and tender belly, and the swollen state of the scrotum, all lead to the impression that a portion of the intestine has passed down through the rings, and has become incarcerated.

[Mr. Key then brings forward several interesting cases, to shew the treatment he adopted when the intestine had been injured, and where escape of the fæces into the peritoneal sac was apprehended. In the first case, the man had received a blow upon the pad of his truss, which he wore for a reducible scrotal hernia. Violent symptoms came on, and Mr. Key ultimately opened the sac, in which he found neither intestine nor omentum, but which contained a firm, fibrinous deposit, which adhered to the serous surface of the sac, and also extended upwards into the neck of the sac, so as to close all communication with the abdominal cavity. The man experienced no relief for three days, when a copious discharge of fluid fæces from the sac took place, and the urgent symptoms soon subsided; the fæces continuing to pass freely for four days, when natural defecation took place, and granulations soon closed the intestinal opening. In the second case, the man received a violent blow upon his hernia, which was followed by such severe symptoms, that Mr. Key concluded the bowel had been severely injured; and for fear of fecal extravasation into the peritoneal cavity, he determined on opening the sac, as in the former case, with the view of affording an exit to the contents of the sac, if the fæces should have escaped into it.

On the fourth day after the operation, fæces escaped by the wound, and entirely relieved the patient. On the seventh day, the fæces passed by the rectum, although they still continued to pass through the wound for five or six weeks afterwards; when ultimately the part completely healed, and the man was dismissed quite cured.

Other cases are related of a somewhat similar kind, which occurred many years ago, which proved fatal; and in which no

such attempt by operation to relieve fæcal extravasation had been made; although the post-mortem appearances would have warranted a similar operation. Mr. Key then goes on to say:]

The results of the foregoing cases, together with the remarks that I have appended to them, may not be without some use, in drawing the attention of surgeons to the danger attendant upon these accidents, and to the possibility of rescuing the patient, by a timely operation, from the necessarily fatal consequences of fecal extravasation into the cavity of the abdomen. To distinguish between the three degrees of injury to the bowel that I have ventured to suggest as the ordinary effects of blows upon a hernial sac, does not appear to be difficult, if due examination be made of the parts injured—if the exact seat of injury be carefully ascertained—and if care be taken to draw correct information from the facts as they present themselves.

It does not appear that persons are always aware of being the subjects of hernial protrusion: some, from carelessness, failing to notice the existence of a rupture; and others, from design, concealing their knowledge of the circumstance, when closely questioned as to enlargement at the rings. In two of the cases related, the patients did not seem to have been aware of any hernial swelling before receiving the blow. The history therefore of these cases, given by the patients, cannot be wholly relied upon. Their ignorance of the fact is not to be taken as evidence of a rupture not having existed previously to the blow: and it is of no little importance to establish the existence of a hernia; as without it, a rupture of a bowel is in the highest degree improbable, by a blow received upon the pelvis, or scrotum, or even upon the inguinal canal. Careful examination of the abdominal rings, and of the canal, can alone decide the absence or presence of a hernia, and establish the probability, or otherwise, of the bowel being ruptured, so far as the existence of a hernia may favour it.

It may be urged, that the symptoms following upon a bruised intestine, or even upon a contusion of the testicle, may closely simulate those of a ruptured bowel. After these injuries, pains of a severe kind are felt about the scrotum and groin; the parts cannot endure rough handling, and vomiting sometimes follows.

but these symptoms are transient; the shock passes away, and re-action ensues. The peculiar distress of countenance characteristic of ruptured bowel is wanting in the less severe injuries of these parts; and it is only the continued and increased urgency of symptoms that fail to be relieved by the mild means resorted to, that should induce a surgeon to take the more serious view of the injury.

The period and manner in which the signs of lesion to the bowel shew themselves will serve sufficiently to point out to the surgeon the course which he is to adopt. The unnecessary exposure of a hernial sac and its contents is as much to be avoided, as delay is to be deprecated when extravasation of feculent matter is taking place. The former, however, is far the lesser evil; as experience shews that, in cases erroneously supposed to be strangulated hernia, the operation of opening the sac has been productive of no mischief. It is not likely that a surgeon, without ordinary discretion and knowledge, will be liable to mistake a mere external contusion, be it ever so severe, for a burst or injured bowel; nor will he be under any embarrassment how to proceed under the varieties of lesion to which the bowel is subject. The interval of ease that sometimes follows the blow, will not be taken as evidence of the bowel having received no lesion; for it seems, that until the peritoneum suffers from the presence of irritating matter, liquid or gaseous, upon its surface, the constitution does not take alarm. In the most severe injuries, when the rent in the bowel is extensive, and the fecal effusion almost instantaneous, the symptoms at once assume a character too marked to be mistaken; and the only mode of affording relief, namely, that of at once opening the hernial sac, is obviously pointed out. When the opening is so small, as to prevent, for a time, any escape of the contents of the intestine, there is no necessity for any decisive step being taken, until called for by the unequivocal collapse and pain that attends extravasation. The interval of ease may lull for a time all suspicion as to the occurrence of rupture; but when extravasation begins, and not before, the surgeon's interference is called for; and no time should then be lost in affording an outlet to the offending fluids.

Guy's Hospital Reports, No. 14, *April* 1842, *p.* 261—277.

50.—ON INTESTINAL OBSTRUCTION FROM STRICTURE OF THE SIGMOID FLEXURE OF THE COLON.

By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds General Infirmary, &c.

Several attempts have been made to relieve congenital or acquired obstructions of the lower part of the intestinal canal by the establishment of an artificial anus; and different situations have been selected for the preternatural opening—namely, the perineal, the iliac, and the lumbar regions. The perineal operation is only applicable to cases of congenital obstruction. Acquired obstructions require the opening to be in the anterior or lateral part of the abdomen; and the operation in this situation is applicable also to congenital obstructions, and may be performed in such cases as are considered irremediable by an artificial opening in the perineum.

In 1720, M. Littre originally proposed the formation of artificial anus in the iliac region. According to his plan the abdominal walls and the *peritoneum* were divided, and the distended intestine was to be drawn out at the wound, and opened. He further proposed to retain the intestine in the vicinity of the wound by a ligature passed through the mesentery, which should be allowed to remain a few days, until the bowel had become united by adhesion to the external wound.

M. Pillore, in 1776, modified the iliac operation of M. Littre, by uniting the wound of the intestine to the parietal wound by several points of suture.

The operations of Littre and Pillore have been performed in numerous instances. In the article Fistula Intestinal of the "Cyclopædia of Practical Surgery," I have arranged in tabular order twenty-four such cases, from which it will appear that, in several instances, the operation has been successfully performed, but at the same time it is evident that the mortality was considerable; and in most instances, where the cause of death is stated in the reports, peritoneal inflammation led to the fatal result.

To obviate the danger incurred by opening the peritoneum, M. Callisen, of Copenhagen, proposed to open the colon in the lumbar region, where it is only partially covered by peritoneum, and he maintained that the intestine might be reached in this situation without opening the cavity of the abdomen. To accomplish this object, he proposed to make a vertical incision,

extending from the edge of the false ribs parallel to the anterior border of the quadratus lumborum muscle. He thus hoped to reach the colon between the layers of its short and imperfect mesentery. The principal objection advanced against the operation of Callisen was, that in most instances it would be found impracticable, as the colon in the lumbar region was generally attached by a mesentery of considerable extent. It was, moreover, urged that Callisen himself found great difficulty in executing the operation on the dead body, and that in many instances he failed, the peritoneum having been unavoidably opened. Most surgeons, amongst whom was Dupuytren, agreed in condemning Callisen's proposal, and gave the preference to the iliac operation of Littre or Pillore, until within the last three or four years, when the operation of Callisen has been revived and modified by M. Amussat. This accomplished surgeon has shown that the failure of the operation on the dead subject was owing to the intestine being empty, and that in such cases as require the formation of an artificial anus the colon is greatly distended; in which condition the layers of peritoneum, forming its imperfect mesentery, are so far separated as to allow of the intestine being reached without opening the peritoneum. He has farther introduced an important modification of the operation of Callisen by adopting the transverse instead of the vertical incision of the integuments and muscles.

M. Amussat has performed the operation five times. Four of the cases were perfectly successful. The subject of the fifth case died on the tenth day from the progress of the carcinomatous disease, but had experienced great relief from the artificial opening.

The case which I now submit to the profession affords another instance of the easy practicability of the operation, and of the relief which it is capable of affording. Had it been performed a few days earlier, before the cæcum had been irrecoverably injured by extreme distension, it is not improbable that the result would have been fortunate.

[The patient, Mrs. Wager, had been subject to constipation from her youth; and from certain causes, on the 18th of February, complete obstruction occurred. On the 1st of March Mr. Teale first saw the case, and on passing a small ivory ball attached to a silver stem up the rectum, it was arrested at the

distance of about 6½ inches above the anus. Powerful injections were tried in vain, as they did not pass the strictured portion; and it was ultimately agreed to make an artificial anus in the lumbar region. This was done in the presence of Mr. Samuel Smith, and Mr. William Hey. It was decided to open the colon after the manner of Callisen modified by M. Amussat. It was supposed that the upper part of the rectum was contracted, and that the constriction might extend to some little distance, but that the descending colon was not implicated, on account of the prominent elastic and highly tympanitic state of the left lumbar region: for this reason the left lumbar region was selected for the operation, which is thus described by Mr. Gibbes.]

The patient being placed upon a table, on the right side, with the face and abdomen inclining downwards, Mr. Teale made an incision through the integuments four and a half inches in length, extending forwards from the outer edge of the sacro-lumbalis and longissimus dorsi muscles, midway between the lower ribs and the crest of the ilium, nearly parallel to the latter. The different layers of aponeurosis and muscle having been divided in succession upon a director, a considerable mass of fat was forcibly protruded at the wound. By the finger the packets of fat were detached, and the posterior surface of the colon was very readily felt, extremely tense and elastic, and was soon exposed to view, its pale blue tint and translucent aspect contrasting strongly with the opaque white fat in the neighbourhood. Two temporary ligatures were passed through the muscular and mucous coats of the colon, and a considerable quantity of air escaped through the punctures, which so far diminished the tension of the intestine, that Mr. Teale was enabled to pinch up a fold of it, and to open it with the scalpel, after which there was a profuse discharge of air and liquid fæces. The opening in the intestine was further dilated in a vertical direction by a probe-pointed bistoury to such an extent as to allow of the introduction of three fingers. The edges of the intestinal aperture were then fixed to the external wound by four points of suture, and the wound of the integuments was united by two twisted sutures. The operation being completed, Mr. Teale, and other surgeons present, introduced the forefinger into the artificial anus, and ascertained that the colon immediately below the aperture formed a thickened corrugated

pouch, from which no opening into the lower part of the intestine could be detected, without instituting a more tedious search than was considered justifiable. The intestinal tunics forming this pouch, although much thickened, and firmer than natural, did not communicate to the touch the indurated feeling of scirrhus. On passing the finger upwards into the descending colon, it was found to be capacious, its coats thin and elastic, possessing a perfectly healthy structure.

[The patient experienced considerable relief after the operation, and in many respects, might be said to be doing well for several days; the fæces finding their way through the wound regularly. Bronchitis, however, came on, on the fifth or sixth day, and she rapidly sank.]

Examination of the body four hours after death.—On opening the abdomen a considerable quantity of liquid and solid fecal matter was found in the pelvis, and a large ragged opening, through which the fæces had escaped, was seen in the cæcum. The coats of the cæcum were extremely thin and softened, and dilated into a large pouch, which adhered to the neighbouring folds of intestine. The mucous membrane of the cæcum was of a deep red colour, and exhibited some small superficial ulcers. These morbid appearances were entirely limited to the cæcum. The ascending, transverse, and descending portions of the colon were empty, and appeared perfectly healthy. The artificial opening had been made at the lower part of the descending colon. The site of the operation could not be detected by examining this portion of intestine from the opened cavity of the abdomen, nor was there the slightest trace of peritoneal inflammation, or lesion of the peritoneum, in the neighbourhood of the descending colon. Immediately below the artificial opening, the coats of the intestine were thickened; the mucous membrane had a granulated feel, and there existed at this part a firm, circular stricture, that would only allow of the passage of a full-sized urethra bougie. This stricture was situated eighteen inches above the anus. Below the stricture, as far as within six or seven inches of the anus, the intestine was reduced much below its natural calibre, but its coats did not exhibit any obvious alteration of structure. So great was the contraction of this part of the tube, that the tip of the forefinger was very tightly embraced by it throughout its whole extent, but by

using a considerable degree of force, the coats of the intestine admitted of being dilated to such a degree as to allow the fore-finger to be pushed through successive portions of the tube, until it reached the upper part of the sigmoid flexure, when it was firmly arrested by the unyielding and contracted coats of the bowel; these, however, did not exhibit in the slightest degree the induration or altered structure characteristic of carcinoma.

The left pleura presented numerous recent adhesions. The bronchial mucous membrane was a little injected, particularly in the smaller ramifications. A small portion of the middle lobe of the right lung was hepatised; heart and pericardium healthy.

Provincial Medical and Surgical Journal, March 19, 1842, *p.* 486.

[It appears from the perusal of all the cases related by Amussat, as well as this one of Mr. Teale's, that the subjects were more or less advanced in life. This interesting operation, however, may be applicable to the earliest periods of life, as will be seen in the following case of Mr. Parrott. It occurred in an infant whose mother was thirty years of age, and in every respect healthy.

The nurse observed that the infant parted with no meconium, and on examination, found that some obstruction existed. It was found that a cul de sac existed about an inch and a-half from the anus. M. Larrey plunged a trochar into the cul de sac, but no meconium escaped: the child was taken to Dr. Amussat when it was forty-eight hours old. This gentleman was of opinion, that about two inches from the anus there existed an interruption of the rectum, the calibre of the gut being at this point totally obliterated. It was also his opinion, that an artificial anus could not be made either in the anal or coccygeal regions, and he therefore was determined to open the colon in the left lumbar region.]

The child being placed on his right side, a transverse incision, about two inches in length, was made midway between the crest of the ilium and the last false rib, commencing at the external border of the sacro-lumbalis and longissimus dorsi: the subjacent textures having been divided, the cellular and adipose tissue covering the kidney and colon was exposed. This was now, after a long and careful dissection, divided, after a great

deal of uncertainty. The lower extremity of the kidney was fully exposed to view, but the intestine could not yet be recognised. The incision was, therefore, enlarged backwards and downwards (with an artificial light, the shutters having been closed), and Dr. Amussat saw (for his feeling did not afford him any certain indication) something of a violet colour, which he judged to be the small intestine, placed outside, and before the kidney. That was pushed backwards, and the colon at length detected. Two tenacula were now introduced longitudinally, one from above downwards, the other in a contrary direction, in order to prevent any retraction of the bowel, and a longitudinal incision afterwards made. A considerable quantity of gas and meconium escaped. The edges of the opening in the intestine were fixed to the integuments by means of three sutures, and tepid injections administered. The hæmorrhage which occurred during the operation was easily suppressed by means of torsion. The artificial anus was now covered by a hot cataplasm, and the child removed home.

[The case improved daily, the wound looking healthy, and the fæces continuing to pass through it regularly. On the fourteenth or fifteenth day, the fæces were obstructed for forty-eight hours; bougies were introduced and injections used, and the fæces passed once more. The case continued to do well.]

Medical Gazette, March 25, 1842, *p.* 16.

51.—ON TAPPING OF THE THORAX.

By John Snow, Esq., M.R.C.S.

[Although paracentesis of the thorax is not frequently called for, we are occasionally obliged to have recourse to such an operation, in order to liberate liquid or gaseous bodies. The lungs themselves, by their elasticity, might assist materially in expelling any air which they contain, were they pressed upon by the atmosphere with equal force on their internal and external surfaces. But this is not the case, for so long as the walls of the chest are entire, the atmosphere is prevented from exerting its usual pressure externally; it can only do so internally: but when we make an opening externally either by the lancet or trochar, the atmosphere then exerts its pressure externally as well as internally; and such external pressure would effectually

prevent the power of the lungs to expand. In the operation of tapping the chest, therefore, Mr. Snow has suggested the following instrument, which seems well adapted for the purpose; as it promises to prevent the introduction of air into the thoracic cavity. Dr. Davidson, of Glasgow, has been in the habit of applying cupping-glasses over the canula introduced for empyema, in order to withdraw the fluid, and prevent the ingress of air. Mr. Snow describes his instrument as follows:]

By its means any fluid can be withdrawn from the chest, without making a direct communication between that cavity and the external air. It consists of trocar and canula with a stop-cock in it, the trocar to pass through the open valve of the stop-cock. A portion of the trocar must be made perfectly cylindrical, and to fit accurately the whole length of the canula. In withdrawing the trocar from the canula after their joint introduction, it must be brought so far as to be clear of the stop-cock, which point is indicated by a mark on the trocar, and then the stop-cock must be turned before the complete removal of the trocar. The portion of elastic tube must now be screwed to the canula; and to this tube must be screwed a double action syringe, with two distinct valves, like a stomach-pump. The valve of the stop-cock can now be re-opened, and by working the pump, the contents of the pleura, whether gaseous or liquid, will be withdrawn. It is evident that not a particle of air can enter the pleura, and that the integrity of the chest as a pneumatic apparatus is not impaired during the operation. Before introducing the trocar, the skin must be drawn a little from its situation, and then by withdrawing the canula slowly at the end of the operation, the correspondence between the superficial and deeper wounds will be lost before air can enter the pleura.

If the lung be already firmly bound down before resorting to the operation, in a case of effusion, it will not be practicable to draw off the whole of the liquid. In such a case the resistance to using the pump, and the sense of uneasiness in the patient, will indicate when to stop, as in using the enema pump; and if the liquid be serum, it will be preferable to leave a little in the thorax; if, however, it be pus, the pump can be removed, and air admitted to allow of its complete removal.

This instrument must possess great advantages in the cases in which paracentesis is at present performed, and it will extend the occasions on which the operation may be resorted to with safety and advantage.

Medical Gazette, Jan. 28, 1842, *p.* 707.

[There certainly is not so much objection to the introduction of air into the thorax after paracentesis as is generally supposed; for, notwithstanding the pressure of the air externally, the lung will frequently expand with the motion of the chest, unless bound down by adhesions; and the air introduced through the wound will often be absorbed in a few hours. An intrument somewhat similar in principle to this of Mr. Snow's, is mentioned by one of the German writers; which is on the plan of the old enema apparatus. "It consists of an empty bag, which is drawn over the trocar and canula, and fastened to the chest by adhesive plaster: the trocar when withdrawn, is allowed to fall into the bag, into which the liquid follows."—*(Lancet, Jan.* 1, 1842, *p.* 486.*)*

Dr. Prichard, physician to the Bristol Infirmary, has been accustomed for some time to evacuate the fluid in hydro-thorax, as well as in abdominal dropsy, by means of the common grooved needle. He says:]

During the use of the common grooved needle for exploring the chest, on ascertaining positively the presence of fluid, previous to paracentesis, it happened on one occasion, at the Bristol Infirmary, that so large a quantity of fluid passed readily through the instrument as to preclude the necessity of any further operation. As paracentesis of the thorax, by means of a trocar, is much more painful than the introduction of the needle, and is sometimes followed by troublesome results, I determined to try for the future whether the same success would follow the use of the latter instrument. In many instances this was found to be the case, but occasionally the fluid was too thick to run off through so small a passage. This was obviated by getting a needle made with a somewhat larger groove. Such a needle has been used with perfect success in every case of the kind that has fallen under my observation during the last year or two, and the number has been considerable. The pain is so slight, that a patient, who has once experienced it, totally disregards it, in the desire of that relief which he has

obtained, and has called eagerly for a repetition, to which he has submitted to as a trifling annoyance.

I have now a patient in the Infirmary, a female aged fifty, lately affected with ascites. She had been twice tapped by means of the trocar. When she was full a third time, I proposed a third paracentesis. She earnestly deprecated it on account of the pain which she had suffered from the trocar on a former occasion. It occurred to me to try the grooved needle, and it was accordingly passed through the linea alba, and the patient was relieved. It is worthy of note that the effusion of fluid has not returned. The woman, although previously in a state of very broken health, appears now, after the interval of some weeks, to be convalescent. I think it just possible that paracentesis by the needle, may be less favourable to a return of effusion in cases of ascites, as it is known to be in those of hydrocele. Whether this may be the fact or not, I am sure that great advantage will arise to patients if the use of the needle be substituted for that of the trocar in tapping both for ascites and for hydro-thorax. I am persuaded that the practice of deferring paracentesis in the former disease till all other means, many of which are very exhausting ones, have been long tried, and have eutirely failed, is one principal cause of the frequent return of effusion. The use of the needle affords so much greater facility that the operation will cease to be dreaded, and will be performed more easily, and if so, with more frequent ultimate success.

Medical Gazette, March 25, 1842, *p.* 19.

[Perhaps an improvement on this instrument is the minute trocar and canula, first used by Dr. Babington, and recommended very strongly by Dr. Golding Bird, in the treatment of a case related to the Wesminster Medical Society :]

Dr. Bird laid before the society an instrument invented by Dr. Babington, as preferable to the grooved needle ; it was a very small trocar and canula, which, together, were not thicker than an ordinary grooved needle, and a probe which would pass through the canula. He (Dr. Bird) had often used the grooved needle to diagnosticate empyema, and had found at different times that no fluid escaped by it when the chest contained plenty, as was afterwards proved by operation ; this arose from the tissues filling up the groove of the needle, an

event the trocar would obviate. Empyema was never a true effusion of pus, but only of a puriform-looking liquid; and the grooved needle often separated the serum from the small concretions of albumen, and caused an empyema to be thought a simple serous effusion, but the small canula would be more likely to show the true nature of the effusion. Moreover, the grooved needle might cause a little serum to ooze from the cellular tissue of any part of the body, more especially if there were any inclination to œdema, and would thus lead to a false conclusion; but such a minnte escape of serum by the canula would not mislead in that way. He related a case in which there was every physical sign that could lead to the conclusion that there was effusion into one side of the thorax. This little trocar was introduced, but no fluid escaped; and on passing the probe through the canula, the lung could be felt distinctly; no ill effect followed this tentative measure, and the case turned out to be one of rapid softening of the lung after tubercular deposit. Dr. Babington had used the instrument to diagnosticate an obscure tumour filling the right hypochondrium and flank; a thick, dirty fluid escaped, and the probe could be passed to any extent without meeting with resistance, showing that the tumour contained some viscous fluid; no ill effects followed this measure, and when the patient died, the tumour was found to consist of an enormously distended gall-bladder.

Lancet, April 9, 1842, *p.* 60.

52.—VESICO-VAGINAL FISTULA CURED BY THE ACTUAL CAUTERY.

By S. A. Payan, M.D., F.R.S.E.

[Most practical surgeons are aware of the very great difficulty of treating these cases successfully. Hence the innumerable methods of treatment which have been proposed. "The climax of these, is a recent proposal to lay the urethra, bladder, and vagina, into one, by a bold stroke of the knife, and trust to granulation for a radical cure, as in other fistulæ."

In the case related by Dr. Payan, it was at Mr. Liston's suggestion that the actual cautery was applied to the fistula at *very long intervals,* viz., four or six months; and in this consisted the peculiarity of the treatment.

The fistula commenced after a severe and lingering labour of three days' continuance, which was completed at last by means of instruments.

There seems also to have been an opening in the rectum, but this gradually healed up.]

The urine dribbled away continually, so that she was never dry for a single instant; and she describes the irritation and discomfort to have been so utterly intolerable, as to render life a burden to her. The size of the false passage was so considerable, that she could easily introduce into the bladder her middle finger, covered with four plies of surgeon's lint.

[She at first placed herself under the care of Dr. Thomas Molison, who took the greatest interest in the case, and employed the most judicious means for its cure. Amongst other remedies, he applied the actual cautery in pretty quick succession, with a view of keeping up an inflamed, puffy, and raw condition of the edges of the orifice, and thereby promoting adhesion. But the great error in this, as well as in most cases where the actual cautery has been applied, seems to have been in not giving time for that contraction to take place which invariably follows the application of the actual cautery. The patient returned home, after some time, without experiencing much benefit. On her return to Edinburgh, two years afterwards, the orifice had considerably diminished in size, owing to the edges having contracted. It was even now large enough to admit the introduction of the little finger.]

It was agreed in consultation, that the actual cautery should again be had recourse to,—not, however, at short intervals, but with an intervening period of a few months.

Mr. Liston's experience enabled him to state, that no sudden advantage was to be expected from the operation; on the contrary, that the more immediate effects would apparently be to aggravate the evil, inasmuch as the disengagement of the slough might for a time increase the size of the opening; but that we might confidently look to accomplish a cure in time, through the consecutive effects of the cautery,—that process, namely, of gradual contraction, analogous to what we observe in the cicatrices of severe burns of the skin. Accordingly, it was carefully explained to the woman, that the treatment would occupy a very long time, and that the operation would require to be

frequently repeated. The parts were then touched with the iron at a red heat, and she was sent home, with instructions to return as soon after the expiration of two months, as might suit her convenience.

Since that date, April, 1833, the cautery has been applied six times, with intervals of two, three, or six months, according as the patient presented herself. Every successive examination afforded evidence that the aperture was slowly but progressively contracting, and the last two or three times, it was not without some pains that we discovered it at all, though the oozing of the urine demonstrated its continued existence. The last time I had occasion to apply the cautery, was on the 22nd August, of the present year, when my friend Dr. M'Whirter did me the favour of being present. The opening was then barely sufficient to admit a large-sized knitting wire; it had become somewhat sinuous, and acted as a valve in certain positions of the body, for she had been able for some time to retain a considerable portion of the urine when in bed, but it still continued to escape by the fistula when in an erect posture.

She is now (1835) in Edinburgh, and I have seen her within the last few days. She states to me that no urine has come away by the false passage since the last operation. The bladder appears to have lost all morbid irritability,—permits itself to be freely distended, and is capable of holding the usual quantity of urine. The urethra has been considerably dilated by the long-continued use of the catheter, but she has, nevertheless, perfect command over the sphincter, except in making some violent exertion with the bladder pretty full; in such circumstances, some urine does escape occasionally, but this she hardly looks upon as an inconvenience, because it is easily prevented by a little attention.

London and Edinburgh Monthly Journal of Medical Science, Jan, 1842, *p.* 15.

53.—ON THE TREATMENT OF GANGRENOUS INFLAMMATION, PORRIGO, AND LEPRA.

By W. Davidson, M.D., Physician to the Glasgow Royal Infirmary.

[Dr. Davidson brings forwards two cases of gangrenous inflammation, in one of which there appeared about ten weeks previously a sore upon the inner surface of the prepuce, three

days after sexual intercourse: the integuments around the gland gradually became much swollen, till at last two gangrenous spots appeared, "one in the situation of the primary sore, the other near the frenum, which rapidly extended over the body of the penis, involving and destroying the corpora cavernosa and spongiosa for about two inches. The urethra appeared to be opened to a considerable extent, the whole presenting a deep, foul, and irregular ulcer, the edges of which were indurated and shelving, discharging a bloody fetid sanies. Nitrous acid saturated with nitrate of silver, was ordered to be applied to the ulcer daily, with an emollient poultice." In a very short time, the phagedænic ulceration was checked. The other case was somewhat similar. Dr. Davidson remarks:]

I have brought forward these two cases, not because there is any thing remarkable in them so far as regards the disease, although both of them were very severe, and illustrate the great danger of not acting energetically in endeavouring to check the progress of the destructive ulceration; but because I wish to show the utility of nitrous acid, or what appears to me superior, nitrous acid containing nitrate of silver in solution. Nitrous acid is well known to be a powerful mean of checking gangrenous ulceration. It is mentioned by several writers, and is used occasionally in hospitals, yet as far as my knowledge extends, it is seldom employed in private practice, milder applications, in some cases from a mistaken delicacy, being substituted for it.

The efficacy of the nitrous acid, in the few cases in which it has been tried, has appeared to me to be increased by the addition of the nitrate of silver, inasmuch as it renders it more caustic, tends to diminish inflammatory action, and leaves an ulcer having more healthy granulations.

Strong nitrous acid, however, does not dissolve so much nitrate of silver as might be expected, and the weaker it is, it dissolves the more of this salt. I find by experiment that one ounce of nitrous acid, of sp. gr. 1414, dissolves nearly 14 grains of nitrate of silver, and that 7 drachms of this acid, united to one drachm of water, dissolve 20 grains. In preparing this acid solution of nitrate of silver, a little excess of the latter was always added, in order that complete saturation might be ensured. Some attention should also be given to the quality of the nitrous acid, for if it contain muriatic acid, chloride of silver will be formed at the expense of the nitrate of silver.

[The same gentleman also makes some valuable remarks on the use of *Ioduret of sulphur in Porrigo,* and other cutaneous affections. The cases are as follows.]

Charles Biggar, aged 10, a vagrant, was admitted on the 1st February, 1840. Scattered over the whole of the head were numerous thick greyish patches of scabs, which, when removed, left the surface underneath perfectly bare and shining, but, in a day or two, numerous small pustules made their appearance, accompanied with considerable itching. The eruption appeared in the form of small pustules four years ago. In this case, the scabs were first softened by the constant application of poultices for two days; the head was then shaved. An ointment, composed of five grains of the bichloride of mercury to one ounce of axunge, was tried from the 5th February to the 12th, without any improvement. The following was then employed:—

Iodur. sulphur. ℈ij.; Axungiæ, ʒij. Misce.

This ointment was applied daily to the head; and in a few days a decided amendment was remarked.

On the 5th March, the following report was taken.—Pustules and scales are now completely gone, but there are some bald patches on head in the situation of eruption; no itching; surface of skin pretty natural; general health good.

He was dismissed in a few days afterwards.

Case 2. James Riddell, aged 12, a weaver, was admitted on the 10th Feb. 1840. The whole of the head and neck was covered with thick laminated yellowish scabs, which were easily removed. Some yellowish pretty large pustules were situated behind the ears, but on the scalp they were not distinct, the hair being matted together. A fetid ichorous matter was discharged, and numerous pediculi nestled every where on the head. He had had the eruption for two and a half years, but the general health was pretty good.

A poultice was applied for a day, after which the following ointment was applied, even before the shaving of the head, in order to extinguish the pediculi, which it effectually did in twenty-four hours.

℞ Iodur. sulphur., ℈ij.; Axungiæ, ʒij. Misce.

He was dismissed perfectly cured on the 29th February, or in about a fortnight after the commencement of the ointment,

the skin being quite natural in appearance, without itching, and the hair growing naturally over the whole head.

Case 3. Elizabeth Finn, aged 15, a servant, admitted 29th December 1840. Scattered over the whole head there were numerous yellow pustules, from which there was a purulent fetid exhudation. The hair was matted together, and swarming with pediculi; bowels regular; tongue whitish; pulse 112.

℞ Iodur. sulphur., gr. xx.; Axungiæ, ℥j. Misce. App. ung. cap. bis in dies.

12th January. Porriginous eruption almost gone; no discharge, surface of scalp becoming more natural in appearance; general health good.

This patient was dismissed on the 18th completely cured.

Case 4. Duncan M'Intyre, aged 10, a singer, admitted 30th December 1840. The whole head, particularly the forehead, was covered with a thick dry greyish white crust, accompanied with itching, but without discharge. The disease was of four years duration, and was represented to be of a very inveterate kind. General health good; bowels regular; tongue clean; pulse 80.

℞ Iodur. sulphur, ℈ij.; Axungiæ, ℥j. Misce.

14th January, 1841, or a fortnight after the use of the ointment, the eruption is reported to be quite gone, and the skin covering the scalp natural in appearance.

As a precautionary measure, it was continued till the 22d, when he was dismissed.

Case 5. Ann Sloane, aged 7, admitted 2d June, 1841. About two and a half years ago she received a wound on the right side of scalp with a fire-shovel, which suppurated for a considerable time. In a short time afterwards, small pustules appeared over the whole head, which, on admission formed a thick yellow dry crust covering the whole scalp, accompanied with itchiness. Her general health was pretty good.

℞ Ioduret sulphur, ℈ij.; Axungiæ, ℥j. Misce.

This ointment was applied twice a-day, and on the 8th June, the scales and pustules were completely removed; there was less itchiness and redness of the skin; tongue whitish; pulse natural; bowels regular. No pain was produced by the application of the ointment.

Ol. ricini., ℥ss.; c. submur. hyd., gr. ij.

12th June. Has had some vomiting, from eating some indigestible substance; tongue white, pulse 100; skin slightly hot.

Hab. haust. nig., ℥ ij.; Cont. ung. abrad. cap.

This patient was dismissed with the head quite healthy in appearance on the 14th June.

Case 6. Ann Brysson, aged 12, a servant, was admitted 31st July, 1841. She was in the hospital about two years ago for the same complaint, and was dismissed cured after the lapse of seven weeks. She continued pretty well until four weeks ago, when an eruption of small pustules made their appearance on the head, which became covered with yellow crusts, from under which a thin matter still continued to flow. On the back part of the head, the pustules were distinct, of a yellow colour, and pretty numerous, while on the neck and shoulders they were scanty. A few of the pustules had elevated red bases; the face was much swollen and red; general good health.

App. catap. emoll. capit. et abrad. capill.; ℞ Iodur. sulphur., ℥ i.; Auxung., ℥ ij. Misce. App. ung. capit. mane et vespere.

This patient was completely cured on 17th August following, the skin being then quite natural in appearance.

Observations.—Porrigo, in all its forms, is often a very unmanageable disease, and even when cured is very liable to return. In private practice, and in the hospital, I have tried almost all the external remedies recommended by authors, but have found none so efficacious as the ioduret of sulphur, having repeatedly succeeded in curing the patient permanently with it, after a long trial of other agents. At the same time, it must be remarked, that the evidence derived from the treatment of this disease in an hospital is liable to this objection, that the future history of the case is frequently lost sight of, and there are consequently no means of ascertaining whether or not the disease returns.

The 1st and 4th cases seem to be examples of porrigo scutulata, and both had all the appearances of considerable inveteracy; and I may here remark, that slight cases are rarely sent to this hospital. This species is generally considered the most difficult to cure and even though the tendency to pustulation be removed, there is little dependence to be placed on this sign, until the skin becomes natural in colour, or the hair is beginning to grow.

The 2d, 3d, 5th, and 6th cases seem to be examples of porrigo favosa; the yellow pustules and incrustation, the fetid discharge, the matting of the hair, and the pediculi are all characteristic of this species. It is in general a more manageable disease than the porrigo scutulata, and is more under the power of the ordinary agents employed in its cure. At the same time, it not unfrequently proves somewhat intractable. In the treatment of porriginous affections, the following is a more particular account than what is given in the short history of the cases. The head is first well washed with soap and water, the hair is then cut as short as possible with scissors, a poultice is applied, and continued for a day or two if necessary, to soften the crusts, which being removed as thoroughly as possible, the hair is closely shaved. In general, the ointment is not applied, until the head has been shaved, but if pediculi be present, it is employed from the commencement, in order speedily to extinguish these vermin. The proportion of ioduret of sulphur employed has varied from 20 to 40 grains to one ounce of axunge; but, in general, the latter quantity may be safely used from the beginning, unless there be some unusual inflammatory action present; for it seldom excites any particular pain or irritation. As a general rule, the daily application of the ointment will be sufficient, but, in some cases, it is advisable to use it twice a-day, in order to facilitate the cure.

Alteratives, or any particular internal treatment, have rarely been resorted to, when the general health was tolerably good. Laxatives have occasionally been prescribed, and a mild farinaceous or milk diet.

[The same application was also found useful in *lepra and psoriasis,* though not so decidedly as in porrigo. It was used in the proportion of 20 grains to one ounce of axunge, which was applied daily. The strength may be gradually increased to 40 grains to the ounce. On this treatment Dr. Davidson remarks:]

The ioduret of sulphur does not seem to have so much power over lepra and psoriasis as over porrigo; although in my experience, it has succeeded more frequently than any other agent I have tried, with the exception of blistering by cantharides. Lepra alphoides, being a milder disease than lepra vulgaris, is more under its influence, as well as the milder forms of psoriasis, particularly in children; but the species

named inveterata would prove somewhat intractable to this as well as to other remedies, as I had occasion to witness in a patient, who, although benefited considerably, was not cured; he was unfortunately carried off by fever before the result was ascertained.

Three other patients affected with lepra and psoriasis have been treated in the Infirmary during last August; two of them have been completely cured, the other is still under treatment, but nearly well; all of them of several years standing, and having employed a variety of medicines before admission. In one of the cases, a female, who had been using large doses of arsenical solution before her admission, which she was obliged to lay aside, the comparative effects of the ioduret of sulphur, and the acetum cantharidis were tested, the first upon the lower extremities, and the second on the arms. From the result of this and other trials, I am satisfied that the latter has more power as a local agent in this disease. The acet. canth., however, was found too weak when prepared according to the formula in the Edinburgh Pharmacopœia; the proportion of cantharides was therefore doubled. It is proper, however, to state, that strong pyroligneous acid was alone used, without the addition of the acetic. Some other formulæ were tried for the purpose of producing ready vesication, such as an ethereal and an alcoholic solution of cantharides, which succeeded moderately well in some cases; but the speedy evaporation of the menstruum seemed to prevent their thorough action. The following preparation, which was applied with a small brush, answered the purpose pretty well, viz. one part of cantharides to three of a mixture of equal parts of castor oil and alcohol, especially when the flies were suspended in the oil, as suggested by Dr. Leslie, apothecary to the Royal Infirmary. The following liniment, however, which is a modification of the Emp. Canth. E. P., is superior to any preparation that I have tried. It is sufficiently soft during warm weather to be applied with a brush, but requires to be heated when the temperature of the air is low.

℞ Axung. Ol. Rapii, P. Cantharid. a ℥i.

In order to succeed with either of these vesicating agents, the skin ought to be previously softened, either by means of the warm bath, or sponging with warm water.

London and Edinburgh Monthly Journal of Medical Science, Dec., 1841, *p.* 859—868.

54.—ON AMPUTATION AND THE MODE OF DRESSING THE STUMP.

By Robert Liston, Esq., Surgeon to University College Hospital.
(Reported by John Phillips Potter, Esq., late House Surgeon.)

[Mr. Potter makes a very useful report of the amputations performed in University College Hospital from 1835 to 1840, amounting in all to 66, 56 of which proved successful, and 11 out of the 66 were for severe compound fractures performed within 24 hours after the accident.]

In all cases above mentioned, the flap amputation has been preferred as an operation which, it is believed, is not only more quickly performed, and with much less suffering to the patient, but is attended altogether with better results both as regards the form of the stump and the rapidity of its cure. The instrument used for the operation is a straight-backed knife, with an edge gently curving towards the point, and of a length varying with the size of the limb to be removed.

With only one exception, (in which the ordinary tourniquet was applied,) the artery of the limb was commanded by the fingers of an assistant, compression being made with moderate firmness over the axillary or brachial arteries in amputations on the upper extremity; and over the upper part of the femoral artery in operations on the lower limb.

It is found that very little blood is lost when this plan is adopted, because well-directed pressure immediately over the course of the principal artery of the limb completely arrests the flow of blood through that vessel and its offsets, whilst it does not in the least interfere with the return of blood by the veins, which, from their thinner parietes, are the first vessels to be compressed when the tourniquet is applied.

After the removal of the limb also, when the principal arteries have been tied, the smaller vessels are quickly and easily secured by slightly varying the pressure of the finger.

Another advantage derived from this mode of arresting the flow of blood through the limb, is that the operation itself is more conveniently performed than when the tourniquet is used. When both flaps have been cut, they are forcibly retracted by an assistant, whilst by a few sweeps of the knife the bone is denuded for some distance, and sawn through considerably above the point at which the first puncture in the skin was

made. Now where a tourniquet is used, the retraction of the flaps must be interfered with, to a great extent; but where pressure is made by the fingers only, and the rest of the limb is left free, this part of the operation is performed with the greatest ease, and the motion of the saw, when applied close against the divided muscle, is not interfered with.

There have been 22 cases of amputation of the thigh—2 primary and 20 secondary. There were 4 deaths.

Nearly all the amputations of the leg were performed close to the tuberosity of the tibia, the stump being left only of sufficient length to rest firmly on the cushion of the wooden leg.

The stump is then completely covered by the dress; and, as it does not project much, it is not so liable to injury, or to become the seat of obstinate and painful ulceration, as is the case with stumps made at the middle of the leg or even a little higher.

Here again the ordinary flap amputation has been had recourse to; a short anterior flap of skin being first made by dividing the skin over the upper end of the tibia in a semicircular form, and then the knife being made to transfix the leg, (at a variable distance behind the tibia and fibula, according to the size and degree of muscularity of the limb,) in order to form a suitable posterior flap.

The portion of muscle thus taken into the posterior flap gives a firmness and roundness to the stump when healed; and does not, in most cases, increase the amount of suppuration, or retard the union of the parts. The only cases in which this mode of amputation is inconvenient, are those in which the patient is muscular and in robust health; as in primary amputations for severe injuries, for example. Under these circumstances the muscles do not appear to have the same power of retraction as in patients who have long been in a low state of health. They are therefore much in the way when the stump is dressed; and by projecting beyond the skin, they prevent its union by the first intention, and occasionally cause some sloughing of the parts.

In two cases where, from the muscularity of the patient, this inconvenience was anticipated, Mr. Liston varied the operation in the following manner.

The anterior flap was made longer than usual, by curving the incision downwards in a semilunar form, and reflecting the

skin from the front of the tibia. A posterior flap was then made, also of skin only, and of about the same length as the anterior one. This was reflected from the surface of the gastrocnemius, and the deep structures divided down to the bones, which were separated from the muscles for a short distance before being sawn through.

In these cases the skin flaps healed with unusual rapidity; and the stumps were neat and well covered. In one case, union took place almost entirely by the first intention, and the patient was discharged cured in 25 days after the performance of the operation.

From the accompanying list it would appear that amputation of the leg is an operation which is not so frequently dangerous to life as might be expected. Out of 25 cases, 22 secondary and 3 primary, 22 were successful, giving a proportion of about 1 fatal case out of every 8.

Neither have these generally been found tedious cases; union by the first intention occurring frequently along half and sometimes nearly three-fourths of the line of meeting of the flaps, and the remaining portions granulating without any great amount of suppuration. The average period of time which these patients remained in the hospital before their stumps were completely healed was from forty to fifty days.

Mode of dressing the stump.—When ligatures have been tied around the principal arteries of the stump, the hæmorrhage from the smaller vessels (which are also tied, in cases where the dressing is proceeded with immediately,) is arrested by covering the recently-divided surfaces with lint, soaked in cold water.

This is removed and re-applied every few minutes at first, and then at longer intervals, until all bleeding has ceased; and in order to insure the actual application of the cold water to the bleeding surface, the coagula are from time to time gently removed. When the patient begins to recover the shock of the operation, one or two of these smaller arteries perhaps spout out afresh. These, however, if necessary, are soon secured, as the flaps are still separate and exposed: the greater number of vessels, on the contrary, become plugged up with fibrine, and retract within their sheaths.

Thus all chance of disturbance of the dressing, by effusion of blood between the flaps, is prevented: and that without having

so many sources of irritation present in the stump, as when many vessels are secured by ligature. Where the patient is unusually nervous and susceptible of pain, tepid water, changed more frequently, may be used in a similar manner.

When all oozing of blood has ceased, and when the divided surfaces become glazed over, (which happens generally in from four to seven hours after the operation,) the wet lint and small remaining coagula are removed, and the dressing of the stump proceeded with. The flaps, which are in the most favourable state for union, are now brought accurately together, and retained by several points of interrupted suture. The number of sutures requisite for this purpose varies from two to four; but more than three are seldom used, even in amputation of the thigh. They are removed frequently in twelve or twenty-four hours; but if the flaps are large and heavy, and the threads cause no redness in the neighbouring skin, they may be left for several hours longer, to prevent any dragging on the recent adhesions. When the flaps are thus in apposition, the edges are more closely brought together by means of strips of plaster applied over the face of the stump, at a little distance from each other, so as to allow of the ready escape of discharge, and the abstraction of the sutures when necessary.

Instead of using, for this purpose, the ordinary resinous plaster, which is a dirty application, readily loosened by discharge, and frequently causing irritation and erythema of the skin, a far more convenient material is found in oiled silk or gold-beater's skin, spread with a solution of isinglass, which is allowed to dry. This plaster is sufficiently firm and tough to support the heaviest flaps; it is very adhesive, and being impervious to water, remains for many days without becoming detached; it does not irritate the skin; and, lastly, as it is quite transparent, the line of union may be seen distinctly through it, and additional support may, at any time, be given to a particular part, where it is seen that the lips of the wound are separating. This dressing is found perfectly sufficient for the first three or four days, or even longer in some cases; the stump being kept gently elevated on cushions covered with oiled silk. No bandage is applied at first, but the stump is left uncovered and cool.

In general, very little inflammatory swelling takes place under these circumstances, and what little does occur is not

accompanied with pain, because there is nothing to constrict the parts, and prevent their enlargement.

A bandage is seldom applied before the third or fourth day, though occasionally it is made use of earlier, where the stump is large and heavy, and the union by the first intention not as extensive as usual.

At first, however, the roller is not brought over the face of the stump, but is only allowed to approach the end by circular turns. By this means the discharge is not confined, and the strips of plaster are left undisturbed, these being quite sufficient to prevent the lips of the wound from separating.

When suppuration is fairly established in those parts of the stump which have not united by the first intention, the plaster is usually removed, either entirely or in part, and the end of the stump dressed with lint dipped in tepid water, or in a gently-stimulating lotion, and covered with oiled silk. The bandage also is then brought over the end of the stump in such a manner as to support the flaps together, as the plaster hitherto has done. This simple kind of dressing has the advantage of being cool and clean: and as it may be easily removed, without much pain to the patient, it may be renewed daily.

Medico-Chirurgical Review, Jan. 1812, *p.* 36,

55.—ON PSEUDO STRANGULATION OF HERNIA.

By M. Malgaigne.

[This distinguished surgeon has advanced opinions respecting hernia, which, if correct, would produce important modifications in practice. We cannot, however, but think that the majority of the most eminent of French practitioners delight in wandering from the plain, straightforward, and well-trodden paths of practice, into the regions of useless and unsubstantiated theory. If the principles taught by M. Malgaigne be correct, the common and, we think, judicious practice of operating *early* in strangulated hernia is incorrect. Whereas, most English surgeons are more and more of opinion that in cases of strangulated hernia the great danger is in delaying the operation too long. There are no doubt many patients operated on *too late:* this is especially the case in France. In that country, from some cause or other, the operation is particularly fatal, and this may

be one reason which induces M. Malgaigne to supect that some modification of treatment is called for. He states that in 183 operations there were 114 deaths. He positively denies that fæces habitually accumulate in old herniæ, and substantiates this fact very ingeniously by referring to the well known circumstance that fæces only accumulate in the large intestines, and that this part of the alimentary canal is comparatively but seldom involved in the disease. On this subject he says:]

I must confess that I am astonished at the inadvertence of our theorisers; there is not, there cannot be indurated fæces or even fæcal matter at all, save in the large intestines; and hernia of the large intestine occurs, perhaps not in one of twenty cases of intestinal hernia. Thus, in ninety-five of a hundred instances the case as laid down in the books, is physically impossible, as it can only occur in hernia of the large intestine. But even in hernia of the large intestine, I have never on dissection, met with even a single case of accumulation of fæcal matter in the hernia, whether the patient died of an affection connected with the hernia or not. I go farther, I have examined every author that I could procure, I have collected every case in which the cause of the symptoms was revealed, whether by operation or dissection, and in the whole mass of cases, I have found but one solitary case in which there was really accumulation in the intestine. But the authors of the theory of obstruction never witnessed even a single case.

[Further on, M. Malgaigne states that three principal elements are involved in strangulations, two of which are primary, and one secondary.]

1. Pure and simple strangulation, which is of rare occurrence, which occurs without inflammation, and produces gangrene in a few hours.

2. Pure and simple inflammation, very common, and which is almost always limited to the serous tissue.

3. Inflammation *en masse* of the viscera contained in the hernia, of the epiploon with its adipose tissue, of the intestine and all its coats. This third element seldom occurs, except consecutively to the two others, either as an effect of the strangulation when it is not forcible enough to produce gangrene, or from irrational perseverance in the taxis in cases of simple peritonitis of the hernia.

As to the obstruction of authors it is a creature of the imagination, and it is the unknown peritonitis of the hernia that has been treated, and very badly treated, under that name.

This peritonitis, however, scarcely mentioned *en passant* by the most modern authors, is the most frequent accident to which herniæ are liable, and it has probably been overlooked, because hernia has not been sufficiently studied by surgeons in its simple state. This is strange; the results of the inflammation, and even its symptoms have been appreciated, but have not been traced to their true cause, and when these results and and symptoms have occurred in their most acute and formidable shape, they have been confounded with those of strangulation.

This inflammation may occur in various degrees, which may be reduced to two principal types, the adhesive, and the suppurative inflammation.

The adhesive inflammation is often slight and transitory, is revealed by colic more or less acute, sometimes by symptoms of indigestion, or may go so far as to excite vomiting, hiccup, &c., as real strangulation would do. The hernia is then irreducible, the taxis only aggravates the symptoms; and yet, in this condition of things, confinement to bed, and cold or warm topical applications frequently suffice to effect the reduction. I have had occasion to study this form of affection in my patients at Bicetre, and I have related several cases of it. I may add, that Richter built on such cases the entire structure of his hypothesis of spasmodic strangulations.

Finally, at a more advanced stage the hernia remains irreducible; several days or even several weeks are required to allay the inflammation, and effect the reduction. In one case of epiplocele, I could not return the hernia until the eighth day, in another case of intestinal hernia, the reduction could not be effected till the tenth day. This latter case is particularly remarkable, because as the patient died two months subsequently of another affection, we were enabled by dissection to establish the following points.

1. The hernia was constituted by the sigmoid flexure of the colon, and despite that circumstance, so favourable to obstruction, it had always during the inflammation yielded a clear and tympanitic sound.

2. While the entire hernia still protruded externally, the ring which it traversed, readily admitted of the passage of

three fingers conjointly, which excluded the possibility of real strangulation.

When we succeed in reducing these herniæ, there remains scarcely a trace of the adhesive inflammation, save at the most depending part of the sac, where the peritoneum is thickened, hard, rough, and often presents blackish spots. If from any cause the hernia is left protruding in whole or in part, adhesions are formed; and as I have said, that adhesive inflammation is the most frequent accident that attends hernia during life; so after death the frequency with which we encounter adhesion and thickening of the sac completes the demonstration, and proves the frequency of the cause producing them.

We have now to consider how we are to distinguish these cases of inflammation from cases of real strangulation, and what line of practice we should adopt respecting them. The following sums up in a few words my researches on these points.

1. In old intestinal herniæ of large size, which have never been kept up by a truss, or where a truss if ever worn has been long laid aside, no real strangulation can exist, the ring or rings being very much larger than is sufficient to accomodate the volume of the neck of the hernia. This general fact is deduced from all the observations which I have been enabled to make, whether during life or death, and I have not as yet met with a single exceptional case.

2. In pure epiploceles, however bulky they may be, there most frequently exists an adhesive or suppurative inflammation, which is mistaken for strangulation: I say most frequently, for I do not absolutely deny that strangulation may be in this case possible; but I have certainly never seen it; I have not found in the books an authentic example of such an occurrence, and the reality of such a strangulation has yet to be proved.

3. Consequently in the two cases here specified, the operation is always irrational; and with the exception of the taxis at the invasion and decline of the inflammation, the treatment should be purely antiphlogistic.—*Gazette des Hopitaux.*

Dublin Medical Press, Oct. 13, 1841, *p.* 227.
(See also, British and Foreign Medical Review, Jan. 1842, *p.* 245.

[In article 87 of No. IV, we published some of these observations, but have thought it well to publish more at length this interesting paper of M. Malgaigne.]

56.—ON THE OPENING OF THE TEMPORAL ARTERY.

By Hugh Carmichael, Esq., A.M., Surgeon to the Coombe Lying-in-Hospital, Dublin.

[Mr. Carmichael has suggested a very simple method, by means of which, we may obtain from the temporal artery as much blood as we desire, notwithstanding its strong disposition, like all other arteries, to contract. Several circumstances take place after the division of this vessel which tend to arrest the bleeding. The divided extremities part from each other, and retract within the sheath of the vessel; the divided parts also contract on themselves at the point of section, diminishing thereby the calibre of the vessel at these points, while beyond them its capacity remains unaltered. In consequence of these circumstances, the blood which flows through the divided end of the vessel, soon clots; and it clots not only in the vessel itself to the next off-setting branch, but also in the sheath, and thus prevents further bleeding. This would be prevented, if the artery could be partially opened, as we open a vein in the arm, which is the way originally recommended by Dr. Jones: but, as in a small artery like the temporal, this could not be easily accomplished, we must have recourse to some other method of accomplishing the purpose; and Mr. Carmichael recommends the following simple method:]

Let the track of the artery be first ascertained, and this being determined on, and the vessel somewhat steadied by the two first fingers, it is to be completely cut across by the stroke of a scalpel or lancet carried in the transverse direction of its course. It will then immediately commence bleeding; the blood, however, will flow but for a short time, when it gradually stops, in obedience to the law just stated, as I apprehend. If the artery be now slaped with the nail of the first or second finger fillipped from off the thumb with a little force over and upon the section of it next the heart, or in connexion with the main trunk, the jet will be instantly renewed, and with something even of more force than that with which it bled on being first divided, and continue to bleed so for some time. It will then again lessen, and finally again cease, but will instantly be renewed on resorting to the same means; and so, by adopting this plan each time the bleeding stops, slaping the cut extremity of the artery with the nail in the way mentioned, the jet of blood can be

again and again brought on, and the bleeding be continued to any amount required, even from branches so small as to defy altogether the possibility of obtaining blood from them under the plan at present adopted, and though practised by the most judicious and dexterous hands.

When a sufficiency has been procured, nothing more is required than to wait the next stop, which, if necessary, may be expedited by a gentle pressure with the thumb on the bleeding section of the artery. A small dossil of lint then placed over the wound, and secured with a light bandage, is all that is required to prevent further bleeding.

The principle involved in these phenomena is, I think, obvious. The stoppage of the bleeding from time to time is the result of the formation of the clot in the artery and its sheath, which, being newly formed, is loose and easily broken up. The slaping of the cut extremity with the nail effects this. The artery, together with the sheath, is thereby cleansed of the obstruction, and the bleeding consequently is reproduced.

To ensure success, care must be taken that the artery be cut across completely, which, when small, is not so much a matter of course as might be imagined; so readily does it give way before the impress of the lancet. One stroke of the instrument may effect it; I prefer two, except where the vessel is very superficial, as it sometimes is. By the first the integuments are to be divided to the necessary extent; the second is to be carried deep, and with such a latitude as to ensure the divison.

Medical Gazette, Jan. 21, 1842, *p.* 664.

57.—PROLAPSUS OF THE BLADDER, CURED BY OPERATION.

By R. T Lightfoot, Esq., Newcastle-on-Tyne.

[This patient first observed a small tumour to protrude from the vagina, which gradually increased to the size of an orange, and then to the size of the fist, hanging between the thighs: the greater part was formed by the bladder and anterior paries of the vagina. After remaining in bed twenty-four hours the tumour could be easily reduced, but owing to the capacity of the vagina it soon prolapsed again in the erect posture, and was then accompanied, on making exertion, with an involuntary dribbling of urine. At the patient's urgent request for relief,

Mr. Lightfoot performed the operation for episcorraphie, as recommended by Dr. Fricke, of Hamburg, in the following way:]

The bowels having been previously evacuated, and the hair removed from the parts, the patient was placed on a table, in the same position as for lithotomy, without, however, tying the hands and feet. The thighs being well separated by two assistants, I took hold of the left labium and transfixed it obliquely about the middle with a narrow bistoury three-quarters of an inch from the edge, and in such a manner as to include more of the skin than of the mucous membrane; the knife was then carried rapidly downwards in the same direction to the raphe, half an inch or so in front of the anus: the superior attachment of this flap was next divided, by carrying the incision upwards as high as on a level with the meatus urinarius. The same was repeated on the opposite side; after which the frenulum, and other parts included within the angle formed by the union of the two incisions in front of the anus, were carefully dissected off. The two surfaces thus formed extended from opposite the urethra to within half an inch of the anus, each being about two inches long, and varying in breadth from an inch posteriorly to half an inch anteriorly. The hæmorrhage was so trifling, as merely to require the torsion of one small vessel: the oozing having ceased, six strong hempen sutures were passed through the entire thickness of the denuded surfaces, and tied moderately firm. The first one was applied a few lines in front of the anus, and the last one immediately below the meatus urinarius.

A gum elastic catheter was introduced into the bladder, and the knees were bound together, after which the patient was placed in bed on her left side. The catheter was allowed to remain for the two first days, but owing to the large size of the urethra, part of the urine escaped by the side of the instrument, and coming in contact with the uniting surface produced a good deal of irritation; it was therefore removed, and during the five or six following days it was merely introduced occasionally. The antiphlogistic regimen was strictly adhered to for four or five days, during which cold water was constantly applied to the parts, and the vagina occasionally washed out and cleared of coagulated blood, by means of cold-water injec-

tions. An anodyne was given at bed-time, and repeated for three or four nights, to allay irritation and confine the bowels. Two of the sutures were removed on the fourth day, and the other four on the sixth: at the expiration of which, union by the first intention had taken place throughout the whole extent. The bowels were moved on the eighth day, and an occasional dose of aperient medicine was afterwards given.

In the course of three weeks she was allowed to leave her bed, and walk about a little; and on the 30th of September she was able to attend to her usual housework: she can retain her urine for from five or six hours, and can evacuate it voluntarily, and without the slightest inconvenience. The bond of union is very firm, and appears like an elongated perineum, extending from the anus to within a quarter of an inch of the urethra. The finger can be introduced into the vagina with great ease, the parts being very dilatable.

Nov. 20. Although the patient has been exposed to considerable exercise, there is not the least return of the prolapsus: on desiring her to strain violently, a portion of the corrugated anterior paries of the vagina became visible, but has not the slightest tendency to protrude externally, although the passage into the vagina is enlarged from the longitudinal contraction of the cicatrix.

In performing this operation, I think it would be better not to attempt the union of the posterior part of the labia, but to leave an opening into the vagina between the bond of union and the frenulum sufficiently large to allow of the discharge of the vaginal mucus and menstrual secretion. By adopting this method the operation would be much facilitated; the most troublesome part of it, and, at the same time, the most painful to the patient, being the dissection required for the removal of the frenulum and the parts in front of the anus. During the treatment, likewise, coagulated blood, and the secretions from the vagina and wounds, could be more easily removed; and in case of considerable inflammation occurring after the operation, cold water could be more readily and continuously applied by means of a syringe. By this modification of the operation, the union of the labia would form a kind of bridge, with two communications into the vagina. The extent of this required, would depend very much upon the case; thus, if there was considerable prolapsus of the bladder, and anterior paries of

the vagina, it would be necessary to carry the union as far as the meatus urinarius, and the posterior opening might be left large enough to admit the finger. If, on the other hand, the tumour was principally formed by the uterus and posterior wall of the vagina, then it would be advisable to leave the posterior opening just sufficiently large to admit an ordinary-sized gum-elastic catheter, and the outer one must be left of considerable extent: care, however, must be taken to make the bond of union of sufficient extent, so as to allow for the subsequent contraction of the cicatrix, otherwise one or other of the openings might become so large, as to allow the inverted mucous membrane gradually to be insinuated through it, and any unusual effort would expose the patient to a return of the complaint.

Lancet, Dec. 4, 1841, *p.* 322.

58.—MODE OF PASSING THE LIGATURE FOR POPLITEAL ANEURISM.

By Bransby Cooper, Esq., F.R.S., Surgeon to Guy's Hospital.

In a case in which Mr. Cooper tied the femoral artery, instead of the usual mode, when the artery is exposed, of drawing the saphenous nerve outwards, and then passing the aneurismal needle, armed with the ligature, between the artery and vein, Mr. Cooper adopted the following plan:—immediately on opening the sheath, he passed an aneurismal needle, unarmed, below the whole of its contents, from without to within, and to such a distance, that its curved extremity appeared close to, and on a level with, the upper and inner edge of the artery. There were two branches of nerves in this case, running along the upper surface of the artery: having gently detached these, by means of the blunt edge of a small probe, Mr. Cooper "tilted" them over the exposed end of the aneurismal needle; on which, therefore, remained lying only the artery and vein. Between these, Mr. Cooper now insinuated the end of the probe; and through the space thus made, passed the needle, having removed it cautiously from its former position. In this situation, the needle was armed by an assistant, and the ligature then secured in the usual way. This method appeared to place the separation of the artery from the nerves and the vein more under the command of the operator, while it caused the least possible disturbance to its cellular attachments.

"I may remark," says Mr. Cooper, "that the position in which the thigh is placed before the operation is of great importance, in reference to the subsequent passage of the ligature. By the full rotation of the thigh outwards, and by the bending of the leg, all the muscles are relaxed; and by a pillow being placed under the leg, the patient is freed from the apprehension of moving the limb, and thus interfering with the operation. In regard to the direction of the incision necessary to expose the artery, there is no doubt that, as a general rule, the inner edge of the sartorius muscle is the best guide; but frequently in cases, where, from œdema extending over the thigh, this edge cannot be distinguished, a line may be taken from the centre of Poupart's ligament to the inner side of the patella, and the point at which it is intersected by another line, taken from the anterior superior spinous process of the ilium to the tubercle of the inner condyle of the femur, marks the spot at which the ligature should be applied. The artery, in the case in question, was, as before narrated, seen pulsating on its exposure; but I may state—though to many the remark may be superfluous—that this is far from being uniformly the case. I have seen even the carotid lie so perfectly quiescent after exposure, that a surgeon has thought, from the total absence of pulsation, that it could not be an artery. The whitish-coloured vessel which is exposed in these operations is only discovered to pulsate by being pressed between the finger and thumb. From the details in case No. 2, I think that the advantage of passing the needle before it is armed with the ligature, is sufficiently shown. It is necessary to take great care that the point of the needle be not too sharp; or there will be considerable danger of wounding the vein, whilst the needle is being passed between it and the artery. As to the tightness with which the ligature should be drawn, the surgeon should exercise his discretion, and is best taught by experience. It is frequently stated, that the inner and middle coats of the artery should be felt by the operator to give way under the ligature; but, in a very great majority of cases, I have not been able to detect any thing of the sort. In old persons, where the coats are more likely to be indurated or ossified, a less degree of force will of course be proper.

Medico-Chirurgical Review, Jan. 1842, *p.* 243.

[The same able surgeon makes the following observations on *Concussion of the Brain,* taken from the same number of Guy's Hospital Reports:]

When one or both pupils remain contracted, I am induced, from my experience, to consider this as an unfavourable symptom, characterizing lesion of the brain. In those cases in which I have observed contraction of one pupil, and have had an opportunity of making a post-mortem examination, I have invariably found injury of the brain on the side opposite to that of the contracted pupil. The same violence which produces concussion may cause fracture of the base of the skull: and although the constitutional treatment employed may subdue the symptoms of concussion, during the progress of reparation, effusion may take place, and evidences of compression supervene. Such a complicated injury, however, is generally denoted by bleeding from the ear, at the time of the accident; and I have known a discharge of serum from the external meatus continue for many days after the accident; and yet these cases ultimately did well. Even when this discharge is profuse, it is to be regarded as a favourable symptom, and therefore should not be checked by astringents. The case above alluded to was treated successfully, by general and local bleeding and calomel.

Ibid, p. 246.

59.—TWO CASES OF EXCISION OF THE CALLUS IN BADLY UNITED FRACTURES.

By Professor Portal.

A man, 32 years of age, fell from a cart and fractured his tibia and fibula nearly in their middle. Inflammation, followed by purulent infiltration, attacked the limb, and as the patient was very restless, after the cure was effected, it was found that the fragments of the bone had united in an irregular angular manner. Professor Portal first tried to break the callus across, in order to reset the limb, but, not succeeding in this, he cut down on the irregular angular projection by a vertical incision, and uncovering the bones, passed a chain saw round them and removed about an inch of the bone. The wound united by the first intention; the limb was kept carefully extended, and in forty-eight days the patient was dismissed cured. The limb was shortened a very little.

The other case was that of a woman who had received a compound fracture of the upper third of the thigh bone. On account of the violence of the inflammation the limb was at first semiflexed, and when this had abated it was placed in the extended posture. After the period of twenty-eight days the bandage was removed, and it was found that the union had taken place irregularly, the broken ends forming an angle at their union. As it was found impossible to rupture the callus which had been thrown out, the ends of the bone were cut down on, a chain saw passed first around the upper fragment and about an inch and a-half removed, and then around the lower, and half an inch of it cut off. The limb was then maintained in a state of permanent extension. The wound suppurated and became covered with an eschar, but no other unfavourable symptoms followed; and fifty-five days after the operation she was dismissed cured, with the limb shortened to the extent of two finger-breadths, but perfectly serviceable.

Edinburgh Medical and Surgical Journal, Jan. 1842, *p.* 256.

60.—ON LIME MOXA.

By Dr. Osborne, Dublin.

Dr. Osborne has availed himself of the high temperature produced by lime in the act of slaking for the purpose of a moxa. Some quick lime in powder, to the depth of about half an inch, is placed on the skin inside a *porte moxa*, or a strip of card bent together and tied so as to form a circle. Some water is dropped on and mixed with it. In about two minutes the mixture swells and becomes dry, and at the same time a high degree of heat is produced, which, according to some experiments, may amount to 500° Far. This moxa, Dr. Osborne considers to be superior to all others; first, from the intensity of the heat, which, by using a larger bulk of lime may equal the potential cautery; and secondly, from its convenience, not requiring the assistance of any heated substance, and being unaccompanied by the emission of sparks or smoke, which create terror in the mind of a patient. When the quantity of lime applied is smaller than above mentioned, or not kept on long, the result is an appearance resembling that produced by acetic acid, and a thick crust is formed, which separ-

ates according as new skin is perfected underneath. When, however, the quantity is as large or larger, and kept on as long as the heat continues, then a complete destruction of the skin ensues, and thus issues may be made of greater depth and in a much shorter time than by the usual escharotics.

In order to ascertain the depth to which this moxa acts, he applies it on the surface of an egg, and then observes the thickness of coagulated albumen formed underneath. This shows the extent to which the serum may be coagulated in the vessels of the part, and which is subsequently separated by ulceration as a foreign body; but the beneficial action of a moxa does not stop here, its superiority as an escharotic or counter-irritant, according to Dr. Osborne's view, consists in this, that the heat produces a contraction and change in the action of the vessels of parts over which it is applied, with great excitement of the absorbents, enabling them to return to a state of health after the failure of all other means, as may be seen from the cases related in Larrey's work on this subject, and as is well known and acted on by veterinary practitioners. In one case, at Mercer's Hospital, it was productive of a very decided change. A female laboured under the symptoms of ulceration of the upper part of the rectum and sigmoid flexure, for above a year, and had constantly most severe pain in those parts on passing her motions, which were accompanied by discharges of purulent and sanious matter. On being examined, the rectum and lower part of the colon were free from contractions, and the fæcal masses which occasionally passed, although productive of great suffering, yet showed that the passage was not considerably narrowed; a lime moxa, which extended to about the size of a crown, was applied over the sigmoid flexure, and was immediately followed by a diminution of pain and an almost complete cessation of the discharge; and before the ulcer produced by the moxa had filled up by granulations, all the symptoms of the internal ulceration had entirely disappeared. In a case of commencing softening of tubercles, and in another apparently of purulent infiltration after pneumonia, its effect in putting a stop to the ulcerative process was most decided.

In a case of hip-joint disease, in which there was great pain and consequent loss of sleep, the patient slept well on the following night, and in a few days had gained much power over the limb. And in another case of the same disease, which had

proceeded to destruction of the joint, and extensive enlargement of the parts around it, a copious discharge of the moxa was followed in a fortnight by a complete subsidence of the enlargement, and a corner of the ulcerated surface is now kept open as an issue, the remainder being allowed to heal under a water dressing. It is to be observed, that the size of the ulcer formed, is always much larger than that of the lime applied, in every case having at least twice its diameter.

When the lime is prepared from calcareous spar, the heat produced on the addition of the water is sudden and intense, and the pain is proportionably urgent. For ordinary purposes, however, well selected pieces of lime, from a lime-kiln, answer well if *fresh*, but not otherwise.

Dublin Journal of Medical Science, Jan. 1842, *p.* 469.

61.—ON LIGATURE OF THE CAROTIDS.

By James Miller, Esq, F.R.C.S.E., Lecturer on Surgery, and one of the Surgeons to the Royal Infirmary of Edinburgh.

[It seems to be a general opinion that the carotids and vertebrals may all be tied with safety, provided that sufficient time intervene between each operation, so as to allow of the formation of the anastomising circulation. But "may both carotids be tied at once without immediate danger to the brain, and with the prospect of a favourable result?" The French Academy have answered this question in the affirmative, and have, moreover, stated that the danger is not with the brain but the lungs. M. Robert states that the vertebral arteries are sufficient for the cerebral circulation, and that ligature of both carotids produces no disturbance either primary or consecutive of the nervous system of the senses. Dr. John Reid also proves that "in asphyxia, cessation of the sensorial function does not arise from diminution of the arterial supply of the brain, but from the circulating blood being of a venous character, and so failing to afford to that organ the excitation requisite for the performance of its functions." M. Robert concludes from his experiments that one great object in treating these cases is in venesection, provided the patient is sufficiently strong. This practice diminishes, in a great measure, the risk of extensive lesion of the lungs. In horses, the ligature of the carotids caused death in a few hours, owing probably to the vertebral arteries diminishing

remarkably in size in these animals as they enter the cranium, being there no larger than those of the dog. The result is a congestion of the lungs, which unless relieved by bleeding, produces fatal apoplexy of these organs, but the pain remains undisturbed.]

Bringing the results of these experiments to bear upon the human subject, we infer:—1. In future the surgeon need not hesitate to secure both common carotids by ligature simultaneously, should circumstances imperatively demand such a severe proceeding. For it is highly improbable that the brain shall suffer by diminution of its arterial supply, seeing that in the horse the vertebrals, even though remarkably contracted in size, are found sufficient for this; and it being probable that the comparatively greater size of the human brain, with its consequent greater capacity for arterial blood, will be fully compensated by the comparatively larger size and full anastomotic circulation of the vertebral arteries.

2. The operation must be performed with much delicacy and skill, and with an especial regard to the safety and integrity of the accompanying nerves and vein. For, in the experiments of M. Robert, it was only when the former were cut or tied, that "nervous symptoms," such as difficulty of swallowing, change of voice, derangements of the senses, abnormal movements, and other obvious disturbances of the cerebro-spinal functions, were ever found to supervene. And, as already stated, there seems every reason to believe that arrestment or interference with the return in the jugulars is fraught with infinitely greater danger to the encephalon, by inducing venous congestion there, than is the sudden limitation of its arterial influx to the vertebral supply. In tying other arteries, experience has made us well aware how dangerous it is in any way to injure the venous coats by the needle or ligature; inflammation of these coats, with obstruction of the canal at the point of injury, (the mildest form of phlebitis,) is one of the gravest accidents that follow the operation; and it is very plain that such an accident to the internal jugular must be peculiarly disastrous.

3. After ligature of the common carotid, and more especially after deligation of both arteries,—supposing the operation or operations to have been performed with due regard to the foregoing precautions,—the attention of the surgeon ought to be wakefully directed to the organs of respiration; in as much as

the experiments of M. Robert declare theirs to be the texture in danger, not the cerebral. And if, on investigation, it be found that in the autopsies of unfavourable cases of obstruction of the common carotid in the human subject, recent lesions, more or less important, of the lungs have been disclosed,—the precautionary injunction will become all the more imperative.

It may, perhaps, be reasoned thus,—that pulmonary lesion is found to result from injury, by wound or ligature, of the par vagum; that the carotid ligature may be supposed, in the first instance, to affect the brain, and through the influence of the eighth nerve, involve the lungs in disease secondarily; and that thus, after all, the brain is the organ in danger. But how is this nerve alone singled out for morbid action, the rest of the nervous system remaining undisturbed? It is plainly stated by M. Robert that, in none of his experiments, where the arterial tissue was alone interfered with, did there occur any indication, however slight, of cerebral disturbance. We are still forced, therefore, to the belief that the brain is not affected by mere diminution of its arterial supply; and that the change of structure in the lungs, resulting from such an operation, is not effected through a perverted influence from the eighth pair of nerves.

4. The form of danger to be apprehended is congestion of the lungs; in other words, an unwonted determination of blood to that organ, caused by a sudden and serious disturbance of the due and healthful balance in the arterial circulation, and resulting either in apoplexy of the lung, if the congestion have occurred rapidly and to a great extent; or in an inflammatory action more or less destructive to the pulmonary texture.

5. To obviate this danger, it will be prudent, more especially in plethoric subjects, to draw blood—the amount varying according to the circumstances of the case—shortly before the performance of the operation, in order to prevent, or at all events diminish this probable interruption of the arterial balance. And in the after treatment of the case, further bleeding will probably be necessary, either to avert evil consequences from the determination to the lungs, which may have taken place notwithstanding all precaution, or to limit or abate the morbid action which may have not only threatened but actually occurred. It will not be sufficient to moderate the heart's action, and the arterial circulation, by antimonials, sedatives, &c.; it is essential that the actual amount of the circulating fluid be diminished.

6. This prophylactic principle need not be confined to deligations of the carotid alone. In operations on other vessels of the first class—subclavians, iliacs, femorals—important internal organs may be saved, and the number of successful issues materially increased, by a precautionary bleeding to a moderate extent, before the operation, and by a more watchful and better directed surveillance than heretofore, during the after treatment.

7. Without coming under the bann of uncharitableness, we may be allowed to suspect that in most, if not all of those cases in which important cerebral affection has supervened, the mere obstruction of the arterial current was not to blame; but that the nerves or vein accompanying the vessel had been more or less injured by the knife, the ligature, or otherwise, during the dissection; or after the operation, casualties may have occurred in or around the wound, sufficient to account for "nervous affections" of consecutive formation; or cerebral disease has either been induced or aggravated by accidents wholly irrelevant of either the operation or the disease on account of which it was undertaken.

London and Edin. Monthly Journal of Medical Science, Jan. 1842, *p.* 3.

62.—SULPHATE OF IRON AS AN APPLICATION IN ERYSIPELAS.

By M. Velpeau.

M. Velpeau has employed, he says, with advantage, in the treatment of erysipelas, the sulphate of iron as an application to the inflamed part. He has used it both in solution and in ointment. The former is prepared by dissolving an ounce of the salt in a pint of water; the latter by rubbing up a drachm of the salt in an ounce of lard. M. V. says that the former exerts most control over the inflammation, generally subduing it in two days.—*La Lancette Française, Nov.* 7, 1840.

American Journal of Medical Science, Oct. 1841, *p.* 481.

63.—TREATMENT OF STRANGULATED HERNIA BY COPIOUS INJECTIONS.

By A. S. Lawrence, Esq., Clifton.

[In article 40 of our First Number will be found some interesting remarks by Mr. Maunder, on the cure of strangulated hernia, by the introduction of a long tube up the rectum so as to give vent to flatus. This was previously practised by Dr.

O'Beirne. We certainly must agree with Mr. A. S. Lawrence that to introduce the tube of a stomach-pump twenty-six inches up the rectum and colon, is a rather dangerous operation, as the rectum itself is only about eight or ten inches in length; and as the distention of the bowels by tepid water is a much safer and easier operation, we subjoin a case in which it was followed by remarkable relief and reduction of the bowel. Mr. Lawrence found his patient unable to reduce the bowel, and suffering from all the usual symptoms in consequence. He says:]

I tried the taxis in the *most gentle* manner, without success. Half-past ten, a.m., bled her until fainting was produced, and again tried the taxis, unsuccessfully. The sickness increased, with cold perspiration. I again attempted to reduce the hernia, but was unable. Twelve o'clock, I applied a bladder partly filled with cold water to the groin, and very gradually injected *four pints* of tepid water-gruel, and returned home for my instrument. At one, p.m., the sickness was relieved; abdomen less tender: again used the taxis, by which the swelling was lessened; I then injected one pint more of fluid, which did not pass so freely as the former quantity, which was still retained, and, in consequence, the piston of the syringe requiring greater propelling force. Two, p.m., says that she is considerably better, and by a repetition of the taxis the swelling became nearly reduced; tenderness of the abdomen but slight. I changed the water in the bladder for colder, and applied it as before. Three, p.m., attempted the taxis again, when the bowel returned easily. Twenty minutes after the reduction she had a large motion, followed by one of very feculent matter, and scybalæ. Six, p.m., quite free from pain and sickness, and feels disposed to sleep. Castor-oil ʒ j. immediately. Nine, p.m., oil had produced a copious and offensive motion.

[The patient did well.]

Lancet, *Jan.* 29, 1842, *p.* 608.

64.—AMAUROSIS FROM PRESSURE ON THE RETINA.

By Edward Octavius Hocken, M.D., M.R.C.S.L., &c.

[Amongst the various causes of pressure upon the retina, hydrophthalmia is not uncommon; and on this subject Dr. Hocken has written a good paper, which, amongst other things, points out the efficacy of turpentine in its treatment. "Gene-

ral hydrophthalmia, is an affection in which the vitreous and aqueous humours are both morbidly increased. The pressure from behind is counterbalanced by the force exerted anteriorly, and hence the iris retains its normal relative situation from the *equality of pressure* exerted on all sides." In this rare affection there will generally be found great imperfection of vision, a tendency to central thinning and a central protrusion of the cornea, occasioning marked *visus obliquus*. The ordinary remedies so frequently fail in this disease, that we are generally obliged to have recourse to paracentesis oculi, with a repetition of the operation when the fluid accumulates sufficiently. Beer even recommends in some cases, that the cornea be divided and the lens extracted, as well as the chief part of the vitreous humour. Dr. Hocken has seen *turpentine* of excellent use in some of these cases. Respecting this treatment, he says :]

I have too often witnessed its decided powers in very chronic changes to doubt its efficacy. Now, although I have, as yet, had no opportunity of fairly testing its effects in hydrophthalmia, yet, from analogy, I infer that it would be most likely to stop the progress of the affection, or induce reparative processes; at all events, it merits a careful trial. How important would it be to find a method of treatment capable of even suspending the symptoms and preventing their advance! Turpentine, in small and regular doses, holds out the best chance of accomplishing these ends, if not of procuring a perfect cure.

The dose should be small, and continued regularly,—half a drachm to a drachm, two or three times a-day, in almond emulsion, containing a small quantity of the sesqui-carbonate of soda in solution, and some agreeable syrup to cover its unpleasant taste. Mr. Carmichael's observations on its employment in iritis, are judicious: he gives an excellent formula for its administration. I have seen this plan of treatment especially useful in the more chronic forms of choroiditis; the natural appearance of the globes and healthy vision being restored by its continued and judicious employment. It succeeded in a patient in whom one eye was affected; and the symptoms suspended, with the occurrence of an exactly similar disease in the same tissues of the opposite organ, again yielding to the careful administration of turpentine.

London and Edinburgh Monthly Journal of Medical Science, March, 1842, *p.* 255.

65.—TREATMENT OF VARIX.

By M. Velpeau, &c.

[The treatment of varicose veins is either radical or palliative. It is not necessary to dwell on the latter. The radical cure has been attempted by a great variety of methods, by acupuncture, cauterization, compression, excision, incision, section, resection, and ligature. All these methods now seem to be nearly abandoned, with the exception of acupuncture, ligature, and local pressure.

In an interesting lecture on the subject, M. Velpeau gives a good epitome of the practice of some of our continental neighbours.]

Acupuncture.—In the year 1839, I published some remarks, intended to show that an artery might be obliterated by leaving a foreign body in it for a certain length of time. This fact was soon applied to the veins. Two methods have been proposed, that of M. Fricke and that of M. Davat.

Methoa of M. Fricke.—The Hambourg professor, having fixed the vein under the skin, passed through it a needle, armed with a strong thread. This was done, at intervals of a few inches, in every vein that it was thought necessary to obliterate. The thread was moved daily in the vessel to excite inflammation, and was removed on the third or fourth day. M. Fricke pretends that this operation never fails; and in November, 1835, he wrote to inform me that it had never, in his hands, given rise to any dangerous symptoms. I have been less fortunate. I operated on twelve patients; inflammation of the vein took place in all; in eight cases the inflammation was merely local; in three the lower extremity was seized with phlegmonous inflammation and extensive suppuration, which required numerous incisions, the patients barely escaping with their lives; the twelfth patient died of phlebitis. One of the three patients, who had so narrow an escape, suffered a relapse eighteen months afterwards. The result of these experiments were, as you may imagine, sufficient to prevent me from continuing to employ M. Fricke's operation.

M. Davat's method.—This method consists in the passing a needle through the skin underneath the vein; the vessel is then raised up by the needle, and a second one is passed downwards through the vein, and brought up again through the vessel,

having passed round the transverse needle which it crosses; the needles are supported by some thread twisted round them in a figure of 8.

Local Pressure.—Delpech's Method.—An incision, about an inch in length, is made over the vein; the latter is raised up, and a small piece of German tinder placed under it; the wound is now closed, compresses are applied above, and pressure is thus exercised over the point of the vein which we wish to obliterate. The wound and the vein soon inflame; but the objections to this method are too numerous to require our dwelling on it.

M. Sanson's Method.—This consists in applying a forceps, the blades of which are brought together by screws, to the vein, The instrument is removed every twenty-four hours. M. Sanson's method is certainly free from danger, but it appears to me to be an ineffectual one.

Ligature.—M. Velpeau's Method.—Gentlemen, the little confidence which I was disposed to place in the operations just mentioned, induced me to attempt some other method. In 1830 I first tried my operation on animals, and in 1835 I first employed it on the living subject. Since then I have repeated the same operation so frequently in public and private practice, that I am unable to tell you how often it has been performed. A strong, sharp pin, with a large head and a waxed thread, are the only instruments that I use. The position of the patient is a matter of some importance. He must be placed in such a posture as will render the veins tumid and prominent. The trunk of the vein is now raised up with the fingers' end, the pin is passed below the ends of the nails and underneath the vein; it will be necessary to protect the finger with a thimble or a roll of linen, for the tissues under the varicose vein are often very hard and resistant. This simple process must be repeated with regard to every dilated vein; eight, ten, twelve, or fifteen pins may be required from the foot up to the knee, but, generally speaking, three or four are sufficient. When the veins are free and moveable under the skin, it is easy to pass the pins under them; but, when they are applied closely to the bones, this is sometimes impossible; you must then pass a strong pin perpendicularly downwards, and then direct it obliquely under the trunk of the vein. The pins, being all placed, are fixed with threads; at first I applied the ligatures as we do for hare-lip,

but this did not exercise sufficient pressure. I now twist the thread circularly round the pin, and draw it tight. The pins and ligatures are not removed before the sixth or twelfth day, when the tissues embraced between them have been destroyed. But even if the eschar be not detached at this period, I remove them, because I feel confident that the vein is obliterated.

The introduction of the pin gives very little pain, but the constriction exercised by the ligature is excessively painful. Hence, you should commence with the highest pin, in order to cut off the nervous communication as much as possible. The effects of the operation are simple. The tissues embraced by the ligatures mortify and are separated, leaving a sore, which soon heals up. A hard chord forms above and below; this is the vein in process of obliteration. No dressing is required after this operation. You have merely to cut short the ends of the pins, to prevent them from pricking the patient. Unless the inflammation be severe, the patient may go about; if it be excessive, then you confine him to bed, and have recourse to the antiphlogistic treatment. As soon as the eschars come away, the small sores which remain are treated as common abscesses or burns.

M. Reynaud's Method.—Being desirous of avoiding the pain occasioned by ligatures, M. Reynaud passes a thread under the vein, and a small compress supported by a strip of sticking-plaster over it; he then tightens the ligature and increases the pressure every day. This method may succeed, but it is so difficult to obtain complete obliteration of the veins, that I fear it would frequently be followed by relapse.

Gentlemen, the operation which I have described to you, is extremely simple and easy of execution; the whole process consists in passing a pin and winding a bit of thread round it. It fulfils the object of obliterating the vein as well as any other method, but is free from the dangers which attend them. You may ask, however, if it always succeeds in establishing a radical cure. Our answer must be, No. The disease will not always yield. When one dilated vein is obliterated, three or four others soon appear, the superficial branches anastomose with the deep ones, and nothing is more difficult than to obstruct completely the circulation of a varicose limb. Hence the efficacy of every process or method that may be proposed for the radical cure of varix is extremely doubtful. In the

observations which I have addressed to you I have considered one point only—viz., the necessity of obliterating the veins as a means of curing varix; this being admitted, we have to seek for the best means, and I think the one which I have proposed to you affords the greatest advantages. Of more than one hundred patients on whom I have operated by this method, not one has presented any dangerous symptoms; some slight external phlebitis and the formation of some small abscesses were the only consequences of any moment that ensued. Still, I always dreaded that such constant success, in this matter, would be interrupted by an unfavourable result, and my apprehensions have been unfortunately realised. The only fatal case occurred recently.

Provincial Medical and Surgical Journal, March 19, 1842, *p.* 484.

66.—TREATMENT OF VARICOCELE.

By M. Velpeau, Paris.

[This disease which consists in a dilatation of the veins of the chord, is treated in various ways by different surgeons, and very much according to the peculiar treatment of varix, which each surgeon adopts. Cumano employed the ligature and extirpation at the same time: Mr. Warren excised or tied the varicose veins of the scrotum: M. Moulinié combined excision with ligature: Delpech divided the scrotum, exposed the chord, and tied or incised the veins; in some cases he passed a small bit of sponge under the dilated veins and fixed it with strips of sticking plaster—it is said he cured six out of seven patients in this way. We should however beg leave to doubt the truth of this assertion. Bell has tied the spermatic arteries for this affection. Within the last ten years several new methods of treating this disease have been tried, all based on the results obtained from M. Velpeau's experiments on the acupuncture of vessels. This eminent surgeon adopts the following method.]

My process, says he, consists in passing a needle underneath the vein, and twisting a ligature round its two ends, so as to compress the vessel in a circular manner. The patient is placed on his back, the scrotum shaved, and the vas deferens held aside. I then seize the scrotum from behind, and with the thumb and index finger of the other hand I bring the mass of varicose

veins forwards towards the integuments, and fix them in a fold of skin; an assistant holds one end of this fold, while I support the other. I then pass a needle under the veins, in the way described for varix, and bring a ligature round it; a second needle is passed within about an inch of the first one. You must avoid inserting the needles too low or too high, and separating them too far from each other. If the lower needle, for example, be placed too low down, you may wound the tunica vaginalis; if the superior needle be inserted too high up, you will have difficulty in separating the veins of the chord; finally, if the needles are placed too close to each other, the two wounds may unite and form one. The needles being placed, the ligatures are wound circularly round them, in the same way as for varix of the lower extremities; I need not, therefore detain you with a description of details which you have heard so lately. When the eschars are detached, the needles are withdrawn from the tenth to the twentieth day. Unless the inflammation which supervenes be severe, the patients are not confined, and a cure takes place in about a month. I have never seen phlebitis occur after this operation; in two cases, however, where the inferior needle was inserted too low down, inflammation of the tunica vaginalis came on. The whole of my patients, then, were cured in a short time; and, of those whom I have since met, not one has suffered a relapse. This, perhaps, may be accounted for by the fact that in varicocele the chances of radical cure are much greater than in cases of varix of the lower extremities, because the free anastomosis between the veins is absent.

Provincial Medical and Surgical Journal, March 26, 1842, *p.* 504.

67.—ON TRACHEOTOMY.

By M. Maslhieurat-Legrand.

[An interesting report on this subject has been read to the Academy of Medicine, Paris, by M. Berard, in which some very excellent cases, shewing the efficacy of this operation, are introduced.

M. Maslhieurat not being provided with a canula, drew aside each lip of the division of the cricoid cartilage with a bent pin; a string attached to the head of each pin, and tied behind the neck, kept the wound open. The cricoid cartilage and three

rings of the trachea were divided in the operation with a probe-pointed bistoury, introduced through a wound previously made in the thyroid membrane. In one case, death seemed to have taken place, and yet resuscitation gradually took place in about half an hour, and the infant expelled during a violent fit of coughing, a false membrane, tubular and bifurcated at one extremity. There is no doubt, that in cases of croup, where death is threatened by a gradually augmenting narrowness of the glottis, and by a consequent mechanical obstruction to the passage of air into the chest, tracheotomy ought to be more frequently practised; but where the disease has extended to the bronchia and lungs, the operation will not be advisable.

A very extraordinary cure is related by M. Trousseau, in the *Journal des Connaissances Medico-Chirurgicales,* for October, 1840, where the patient had breathed his last a few moments previous to the commencement of the operation. The operation in fact seemed to be performed upon the dead subject, and artificial respiration was kept up by means of alternate compressions of the thorax. The heart commenced beating in about a quarter of an hour, and in 57 minutes a deep inspiration took place. The patient ultimately recovered.]

M. Maslhieurat, in his first operation, carefully tied some small arteries and veins, which yielded blood profusely, apprehending, he says, the entrance of blood into the trachea. In so doing, he conformed to the precepts laid down by almost every author who has written on the subject, it being a nearly general precept to open the trachea when the wound is bloodless. Daily experience, tends, however, to show that this precept is unnecessary, and furthermore, impossible to be observed. The entrance of blood into the trachea is a circumstance which need not to be feared. Any one that has witnessed the performance of tracheotomy, must have been struck with the violence with which every substance contained in the trachea and bronchia are expelled through the wound at each expiration, and with what facility the air, on the contrary, enters the lungs, when the lips of the wound are kept asunder. Excepting, therefore, the case where an artery capable of furnishing abundant hæmorrhage, is wounded (and no artery sufficiently large to do so exists in front of the trachea), why should the operator stop to tie an artery, and more especially a vein?

particularly when we know that the surest mode of arresting venous hæmorrhage is to open the trachea largely, so as to render respiration free. Within these few months I have performed tracheotomy six times—on four children, and on two adults. In each case the proceeding was prompt and easy. A few incisions laid the trachea bare, and without tying any vessel, without waiting for the cessation of hæmorrhage, the trachea was punctured at the inferior angle of the wound with a sharp-pointed bistoury, and the rings of the trachea and the cricoid cartilage immediately divided, by directing the same instrument upwards. We preferred incising the trachea with the same instrument with which it was punctured, as we regard the danger of wounding the posterior wall of the trachea as merely imaginary; and there is often the greatest difficulty in introducing a blunt-pointed bistoury into the small puncture made in the trachea by a sharp-pointed instrument.

M. Maslhieurat having been compelled by necessity to keep the lips of the wound open by means of two bent pins, raises the question whether an instrument consisting of two hooks, kept on the stretch by means of a spring, would not be preferable to a canula, and has presented to the Academy an instrument constructed on this principle. The suggested advantages of the instrument are—1st. That it is less likely to become obstructed than the canula; the accumulation of mucus being so rapid that the canula has often to be changed several times daily. 2dly. The wound being kept open by means of a simple hook, which occupies much less space than the canula, a large quantity of air (the extent of the wound being equal) is admitted. 3dly. The proposed instrument can in no way impede the progress of the air into the larynx, while the canula allows little or no air to find access to that organ, a circumstance which, according to M. Maslhieurat, impedes the restoration of the mucous membrane of the larynx to its natural condition, and favours the persistance of aphonia, which is sometimes so obstinate. 4thly. There is, perhaps, somewhat less risk of pneumonia from employing the proposed instrument, which scarcely comes in contact with the mucous membrane of the trachea.

The three first of these alleged advantages seem of little importance. If the canula becomes obstructed, it is easily cleaned and replaced. If the calibre of the canula is propor-

tional to the aperture of the glottis, respiration is perfectly free; and if an opening be made on its convexity, the air finds free access to the larynx. As to the greater irritation caused by the greater bulk and length of the canula—there is unquestionably a danger to be more apprehended in theory from the canula than from the proposed instrument; but daily experience shows the harmlessness of the former instrument.

[In this report by M. Berard, we should be afraid to agree with him in saying, there is seldom danger of hæmorrhage in performing the operation; because cases have been related where the hæmorrhage was fatal, and, therefore, it is always necessary, if hæmorrhage should result during the operation, to tie the vessel before proceeding further.]

Dublin Medical Press, Dec. 29, 1841, *p.* 403.

68.—M. COLOMBOT'S METHOD OF REDUCING DISLOCATIONS OF ORBICULAR JOINTS.

By Professor Williams, Dublin.

M. Colombot's method is thus described:—"In place of practising graduated extension by any mechanical force, all the muscles surrounding the joint are placed in an intermediate state between flexion and extension, so that they may be in the greatest possible state of relaxation; they are then to be taken by surprise, by suddenly rotating the limb, a manœuvre which infallibly replaces the head of the displaced bone."

When the hip joint is implicated, the reduction is to be effected as follows:—"The patient is placed erect, the weight of the body being supported on the sound limb; the trunk is then flexed, so that the thorax rests on a bed or table corresponding to the height of the pelvis, and the patient grasps with his hands the opposite edge of the bed or table with the view of fixing the trunk."

"The surgeon stands behind the patient, on the inner side of the affected limb, if the displacement is anterior to the cotyloid cavity, external to the limb if the case be one of posterior dislocation; the dorsum of the foot is grasped with one hand and the leg is bent on the thigh; while with the other hand placed in the popliteal region, moderate pressure from above downwards is exerted, so as to put the muscles insensibly on the

stretch. The limb is at the same time directed somewhat from within outwards and from behind forward in order to dislodge the head of the femur from its new situation and render it moveable."

"The surgeon now promptly communicates to the thigh an orbicular motion, rotating it circularly, from within outwards or from without inwards, according as motion in one or the other direction may be more conveniently effected, and the head of the bone re-enters its articulation with a snap. By this process the head of the femur is replaced in the cotyloid cavity, which becomes the centre of the motion of circumduction."

Six cases are detailed, in which dislocation of the hip was reduced by the method here described. And in the same volume it is stated that M. Lefebvre has employed M. Colombot's plan with the greatest success, not merely in recent cases, but in dislocations of the hip-joint which had existed for two months and even for a year. The number of cases on which M. Lefebvre operated is not, however, mentioned, nor are any of the cases given in detail, an omission which, of course, materially lessens the value of the statement respecting M. Lefebvre's experience, and which is to be particularly regretted as regards the cases of dislocation of long standing, in which this simple method of reduction is alleged to have been successful.

[Professor Williams, of Dublin, brings before the Surgical Society of that city, two interesting cases where the above practice was adopted, and in one with perfect success. It becomes a question therefore, whether the mode of reduction almost universally adopted, namely, by extension and counter-extension, may not be too implicitly relied upon; for we cannot forget that in dislocations of the femur for example, the direction communicated to the head of that bone, and the mode of impelling it in a suitable direction, although by no means overlooked, are often regarded as secondary considerations, the extension and counter-extension being chiefly considered: in these cases traction is often exerted in a direction not *materially* deviating from parallelism to the axis of the body.]

As to the position in which the limb should be placed, while traction is being performed, theory clearly indicates that the thigh should be flexed on the pelvis, and the leg flexed on the

thigh, inasmuch as this great obstacle to the reduction of the dislocation is muscular resistance; and this obstacle is manifestly diminished in proportion as we succeed in relaxing the muscles. But the double flexion of the thigh and of the leg effects this object in a very remarkable degree; the greater number of the muscles of the thigh being thus relaxed, because their fixed points are approximated, and the powerful triceps does not come into play, inasmuch as all its attachments are inferior to the hip-point. Surely this simple and painless method of *obviating* muscular power is far preferable to *overcoming* the same force by the employment of the warm bath and venesection, the administration of tartar emetic, and the application of mechanical violence. Moreover, flexion of the limb tends to keep the muscles relaxed *while traction on the limb is being made;* whereas if the force is applied while the limb is itself extended (that is to say, in a position more or less parallel to the axis of the body), the mechanical traction tends to put the muscles still more on the stretch, and thus excite them to a more energetic resistance.

If it be true that flexion of the thigh and of the leg relax those muscles that are the chief obstacles to reduction, the second point under consideration may be briefly disposed of; for if the force to be overcome is thus diminished, the amount of traction necessary to antagonise that force may be proportionally diminished also.

The position of the limb most favourable to relaxation of the muscles is fortunately the position also most favourable to coaptation, for flexion of the leg upon the thigh gives us a powerful lever (consisting of the entire length of the leg) which may be made of the most essential service in directing the head of the dislocated bone into its articular cavity,

These theoretical considerations would, of course, be of no weight, unless borne out by practical experience; but we find that many eminent surgeons have given more or less sanction to the principles for which I contend; and there are numerous cases on record shewing that by their application dislocations of the femur may often, at least, be reduced with a facility which contrasts very favourably with the results of the ordinary method.

Hey and Kirkland (Hey's Practical Observations in Surgery, 3d Edition, p. 320,) adopted the method of flexing the thigh

on the pelvis, and the leg on the thigh, making use of the entire length of the leg as a lever to rotate the thigh, in dislocation of the femur into the thyroid foramen; but neither of these eminent surgeons extended those principles to the reduction of dislocations of the femur on the dorsum of the ilium.

Dublin Medical Press, Jan. 5, 1842, p. 2.

69.—CATHETERS WITH GLOBULAR TOPS.

By George Rogers, Esq., Brighton.

[The suggestion of Mr. Rogers respecting an alteration in the form of catheters, has been long anticipated by Mr. Samuel Smith, sugeon to the Leeds Infirmary, who has been accustomed some years past to use catheters with spherical tops in particular cases, but we believe this is not generally known. Mr. Rogers's suggestion is as follows.]

It has long struck me that the ordinary catheter, whatever its curve may be, is an unsatisfactory instrument for introduction to the bladder in any case, whether of stricture, or more particularly spasm. In the latter instance it is very (I think) objectionable, having a beaked end, and presenting throughout its course a surface at all times nearly, if not quite, equal to the calibre of the urethra, and necessarily in course resisted through the entire canal. Now, would not a spherical top to a catheter, of half the diameter of the sphere, be a far superior instrument, from its having only that globular termination, to which resistance would be offered, and never, from its formation, abutting upon sacculated points, the middle lobe of the prostate, or any normal narrowing of the passage.

I remember using many years since, the instruments for examining strictures suggested by Mr. Bell, and with what facility they were passed, and simply from the spherical character of their ends. It appears to me to be a mode of improving a very important instrument, and I beg to call the attention of the profession to the suggestion I offer, assured that although the art of catheterism is in the hands of scientific men, acquainted with every liability of the general structure of the urethral channel, comparatively easy, yet that even in their hands the modern and common catheter is not a perfect instrument, as it involves the whole passage; whilst the spherical-topped one

that I propose, having but a limited surface for resistance, would glide much more easily into the bladder.

Lancet, Feb. 26, 1842, *p.* 759.

Besides the foregoing articles on Practical Surgery, we beg leave to refer the reader to the following, in the different Journals, which we need only glance at. Most that is truly useful and practical we have published at as great a length as possible, being aware that when a valuable article is too much cut up by condensation, it loses much of its value. Although the following articles are such that a short reference to them is sufficient, it is possible that some of our readers might wish to know where to find some particular information which they are in search of.

70.—*Amadon, as a Surgical Application.* By J. Wetherfield, Esq. [Amadon is a substance in popular use for lighting pipes, and has frequently been used to suppress hæmorrhage by some medical practitioners. It is extremely soft and elastic in its nature, and well adapted as an application where much support combined with pressure is wanted, as in the form of a graduated compress in the umbilical hernia of children, and as a compress over fistulous ulcers. It may be spread with soap plaster and applied over the sacrum and ilium to prevent inconvenience from long confinement in one position: it forms a good corn plaster, and supports varicose veins when spread with soap plaster.]

Medical Gazette, Nov. 26, 1841, *p.* 337.

71.—*On Wounds received in Dissecting.* By Herbert Mayo, Esq. F.R.S., &c. [It is not so much in the dissecting-room as in post-mortem examinations that the student must be on his guard, as the poison produced in any texture of the body by means of a high degree of decomposition, causes a mild train of symptoms, and that which is traced to the secretions of inflamed serous membranes, and is already in existence even a few hours after death, causes more serious and often fatal illness. If the student prick himself in the dissecting-room, he should

wash the wound, then suck it strongly with his lips, and bind a strip of adhesive plaster an inch wide twice round the part, and not remove it for three days; and if the subject be recent, or have died of puerperal fever, phlebitis, or peritonitis, it is well after cleansing and sucking the wound to touch it with the point of a probe that has been dipped in nitric acid.]

Ibid, Dec. 17, 1841, *p.* 463.

72.—*Injection of diluted Tincture of Iodine in Hydrocele.* By J. R. Martin, Esq., formerly Surgeon of the Native Hospital, Calcutta. [Mr. Martin corroborates the statements of Velpeau and other eminent men, on the value of iodine as an injection in hydrocele. His injection is made of one drachm of the tincture to three drachms of water; and of this, two common urethra syringefuls are injected.]

Dublin Medical Press, Dec. 1, 1841, *p.* 339.

73.—*On the Opening of Chronic Abscesses by the Subcutaneous Method.* By M. Jules Guerin. [This operation is in order to prevent the admission of air into the cavities of psoas and other abscesses of the like kind. M. Guérin uses a flat trocar, long, but of small diameter, and enclosed tightly in a canula. "The canula is furnished with a cock near its larger end, which, when open, permits the trocar to pass, but when shut, exactly closes the canula. The outer end of the canula fits on the nozzle of an ordinary syringe, and all those parts are so adapted, that no air may pass where they fit one to the other. A fold of skin being made at some little distance from the abscess, the trocar and canula are introduced at its base, and carried under the integuments till the point of the former has entered the sac; then the trocar is slowly withdrawn, and at the instant that its point passes the cock, *that* is turned, and the pus prevented from flowing out. The syringe is now adapted, the cock turned back, and the pus sucked out of the sac at once, or with one or more emptyings and refillings of the syringe, if its quantity be very large. When this is finished, the canula is slowly withdrawn, care being taken to keep the walls of the track through which it passes close together. A pad and bandage are then put on the sac, and the track leading to it, and the orifice of the latter is closed with sticking plaster."]

British and Foreign Medical Review, Jan. 1842, *p.* 241.

74.—*On Division of the Muscles of the Face when affected with Chronic Spasms.* By Dr. Dieffenbach. [Dieffenbach performed this operation in four cases in which the disease had existed for a considerable time. The orbicularis palpebrarum was divided, also the muscles of the cheek, from the ala of the nose to the anterior border of the masseter, and lastly, the muscles at the angle of the mouth. The result of the operations was, that the spasmodic affections were cured.]

Ibid, p. 244.

75.—*Treacle and Water for Burns.* By F. A. Bulley, Esq., Surgeon to the Royal Berkshire Hospital. [Mr. Bulley finds that equal parts of treacle and water spread on rags, and kept constantly applied as a lotion to scalds and burns, is very serviceable in excluding air and giving great relief. He thinks that treacle must have some specific effect in expediting the cicatrisation of burns and scalds, however extensive they may be; and that it often prevents, in a great degree, the unsightly puckering and contraction which so often follow.]

Provincial Medical and Surgical Journal, Feb. 5, 1842, *p.* 379.

76.—*Permanent closure of the Jaws Cured after the lapse of five Years, by Division of the Masseter Muscle.* By W. Fergusson, Esq., F.R.S.E., Professor of Surgery, King's College, and Surgeon to the Hospital. [In this case, the man could not open his mouth wider than a quarter of an inch between the incisor teeth of the upper and lower jaws. About five years ago, a swelling had appeared in the situation of the attachment of the masseter muscle to the lower jaw, which gradually increased to the size of a pigeon's egg. In about two years it burst, and continued to discharge matter for six weeks. A swelling, about the size of half a walnut continued to exist on the spot, and the patient was unable to open his mouth. A variety of treatment was adopted without success; amongst the rest, iodine externally and internally. Mr. Fergusson then determined to divide the masseter transversely. He first tried a partial division, by cutting through about half an inch of the anterior margin of the muscle. "The point of the knife was passed from the mouth through the mucous membrane and buccinator muscle, a little below the parotid duct, and having been pushed between the skin and the masseter, the fibres of

the muscle were divided by carrying the edge from within outwards." Mr. Fergusson, in about 14 days, cut through the rest of the muscle in a similar way, being convinced, from the result of the first operation, that a permanently good result would follow. The case proceeded very satisfactorily, and was completely cured.]

London and Edinburgh Monthly Journal of Medical Science, April, 1842, *p.* 393.

77.—*Treatment of Iritis and Conjunctival Inflammation, by Belladonna Injections.* By F. A. Bulley, Esq., Surgeon to the Royal Berkshire Hospital. [Mr. Bulley relates several cases in which this treatment seemed highly beneficial; and, although the success of his practice would not induce us to follow it implicitly, there are, no doubt, cases in which want of success by more established methods of treatment would incline us to adopt his own. The lotion which he uses, is injected into the eye by means of a syringe; and in the application of the douche or irrigation, he uses different ingredients in solntion, according to the particular structure involved. Thus, in a case of incipient iritis and atonic ophthalmia, he used a lotion of belladonna with sulphate of copper; but in others, left out the copper. If the iris be the seat of disease, and the conjunctiva likewise affected, he uses the following lotion: extract of belladonna, 20 grains; sulphate of copper, 5 grains; water, a pint. To be injected frequently during the day, with a clean brass syringe, with an ivory pipe, capable of holding from three to four ounces of the fluid; "at first it is necessary to throw the stream upon the closed lids, at least for the first few times. By degrees the patient becomes inured to the shock," and can bear it upon the eye itself. The effects are said to be excellent.]

Provincial Medical and Surgical Journal, April 9, 1842, *p.* 4.

78.—*Case of Nasal Enlargement successfully treated.* By Dr. Charles Clay, Manchester. [This was a case of peculiar enlargement of the nose, in a young lady, unaccompanied with pain or any other inconvenience than the size. Besides constitutional treatment, Dr. Clay made pressure on the organ, by means of a mould made of plaster of Paris, which was useful not only by pressing uniformly, but also by its mere weight. The mould was secured to the head by different tapes,

which were applied so as to increase the pressure. In a week the mould was found too large, and a second one was made; a third, fourth, and fifth were obliged to be made, as the nose diminished in size, till it regained its natural dimensions.]

Lancet, April 16, 1842, *p.* 87.

79.—*Division of the Muscles of the Eye in certain cases of Blindness.* By M. Florent Cunier. [When the central portion of the cornea has become opaque, and the remaining portion continues sound, so as to render it possible for the rays of light to be admitted obliquely through the pupil, it has been suggested very ingeniously by M. Cunier, that instead of making an artificial pupil, we might divide one of the recti muscles, and thereby turn the eye sideways, so as to admit the light much more advantageously through the pupil. He brings forwards several interesting cases, in which the process was adopted with complete success.]

Medico-Chirurgical Review, Jan., 1842, *p.* 211.

80.—*On Inflammation of the Mucous Follicles of the Vulva, and its Treatment.* By M. A. Robert. [This affection frequently accompanies blenorrhagia, or occurs in women liable to inflammatory affections in these parts, from pregnancy, abortion, &c. The chief seat of the inflammation is in those two large mucous follicles at the entrance of the vagina. Its cure consists in introducing one of Anel's stylets into the follicle, and then laying its cavity open by means of a pair of probe-pointed scissors, and cauterizing its internal surface with nitrate of silver.]

British and Foreign Medical Review, April, 1842.

81.—*On Iodine Injections in the Treatment of Serous Cysts.* By M. Velpeau. [This surgeon, from the success which attended the use of iodine injections in hydrocele, has extended the treatment to various kinds of serous cysts, enlarged bursæ, &c., about the knee, in the axilla, breast, neck, and other parts. The cyst is punctured with a trocar proportioned to its size, thus emptying it; there is then injected through the canula, a mixture of one part of tincture of iodine, with two parts of water. It should be nearly all drawn off in a few seconds. In a day or two the cyst inflames, though never severely, and ultimately shrivels and disappears.]

Ibid.

82.—*Treatment of Old Ulcers by the use of Corrosive Sublimate and Tincture of Iodine.* By W. Fergusson, Esq., Surgeon to King's College Hospital, &c. &c. [E. Bernard, aged 43, was admitted into hospital with a large, foul, and painful ulcer on the lower part of the left leg; extending from the instep nearly six inches upwards, across the whole front of the limb. Several useless attempts being made to affect a cure, Mr. Fergusson put her on a course of mercury, in the following way. "Twelve grains of bichloride of mercury were made up into 240 pills; two of these were taken for a dose immediately after dinner, the first day,f our on the third, six on the fifth, and so on; increasing the dose by two every second day, until the patient should take thirty pills at a time. After this, if necessary, the dose was to be gradually diminished every second day by two pills, until the number decreased to two. The patient proceeded till she took eighteen pills for a dose, which affected the system, and she then desisted taking any more. Meantime, Mr. Partridge had recommended the sore to be lightly touched with a strong tincture of iodine, which had an excellent effect; and it was supposed, by the combination of the two remedies, a most obstinate case was cured.]

Lancet, Nov. 13, 1841, *p.* 244.

83.—*On Cauterisation of the Neck of the Womb.* [Simple ulcerations of the neck of the womb frequently require the use of caustic, but it has been ascertained, that the deuto-nitrate of mercury does not cause the hæmorrhage which occasionally follows the use of nitrate of silver; and therefore it is recommended that nitrate of silver be only used in those cases which are not accompanied by congestion or sub-inflammation of the womb, as it has rather a tendency, when freely used, to increase the state of congestion. In 1841, out of 44 cauterisations with nitrate of silver, there were 31 in which hæmorrhage followed; whereas, there were only 3 cases of hæmorrhage following the use of the deuto-nitrate of mercury, out of 28 cauterisations.]

Provincial Medical and Surgical Journal, April 9, 1842, *p.* 22.

84.—*On the Subcutaneous Ligature of Arteries.* By F. L. Tavignot. [This operation has never been performed on the living human subject, but M. Tavignot has frequently performed it successfully on the lower animals, and on the dead body.

We dont see how it can with any safety be performed, on account of the impossibility of avoiding including the surrounding textures, and especially the nerve and veins accompanying the artery. But M. Tavignot asserts that these textures may be included without danger. From this, however, we beg leave to dissent.]

For the performance of the operation, two sharp needles, each armed with a double ligature of silk or gut, are required. One of these, the one intended to pass under the artery ought to be larger than the other, as it has necessarily a larger space to traverse. The shorter needle is first to be passed in front of the artery, and withdrawn, leaving the ligature. We then introduce the larger needle at the orifice by which the former issued, and pass it under the artery, bringing it out at the point of entrance of the first. This needle being also withdrawn, we now have in each orifice the loop of one ligature and the two ends of the other. The ends being placed through the loop, are to be drawn tight, and care taken to ascertain, by the absence of pulsation, that the artery is actually included in the ligatures. Such being the case, permanent constriction is effected, by attaching the ends of each ligature to the branches of an instrument, in a horse-shoe form, which he recommends for that purpose. Thus the operation will be completed in a few seconds. In case of circumstances arising which may render it necessary to loosen the ligatures, it is as well to pass a piece of silk of a different colour through the loop of the superficial one; by pulling upon this we can at pleasure withdraw the ligature and remove the constriction.

London and Edinburgh Monthly Journal of Medical Science, April, 1842, *p.* 393.

85.—*Use of Alum in the Treatment of Stricture of the Urethra.* By M. Jobert. [M. Jobert regards alum as possessing many advantages in the treatment of this disease. He uses it as follows:]

A bougie is selected, the finer at the extremity the narrower the stricture. By placing its extremity for a moment in a candle, it is so far softened, that on immersing the instrument in pulverised alum, it adheres to the entire heated surface; the point is then rounded off between the fingers, so as to communicate to it a suitable shape. The bougie when thus armed, is

passed into the stricture and left there for twenty minutes or an hour, according to the period of the treatment, the sensibility of the patient, &c. After a few minutes, a slight smarting is felt, but no other apparent effect is perceived. On withdrawing the bougie, a few drops of whitish mucus escape, which M. Jobert considers as tending to liberate the canal of the urethra. Not unfrequently on the day following the application, bougies of a considerable size can be passed into the bladder.

M. Jobert also uses large bougies armed with alum, in the treatment of stricture of the urethra.

Dublin Medical Press, Nov. 24, 1841, *p.* 327.

86.—*On the Process of Inoculation as a Test of Syphilis.* By Herbert Mayo, Esq., F.R.S., &c. &c. [Although much has been written of late on this subject, we have not seen the particular mode of the application more clearly and briefly explained than by Mr. Mayo. Several objections have been repeatedly urged against the process of inoculating a patient to ascertain with certainty whether or not the chancre is really syphilitic. It has been urged, that by producing another sore, we increase the chance of affecting the constitution: but most surgeons now believe that one sore will produce as much mischief as two. It has been also asserted, that matter from any angry sore, introduced below the skin, is likely to cause the point to fester. This, however, is denied by Mr. Mayo. He makes the following remarks on the way in which the inoculation is to be performed:]

Before arming the lancet, the suspected sore should not have been wiped, or dressed with any chemical application, for two or three hours at least. The most convenient part for inoculation is the back of the forearm immediately above the wrist.

The point inoculated should be covered with a patch of sticking plaster, and not disturbed for three days.

At the expiration of that period, on examining it, either the punctured point is found to be scarcely distinguishable, having healed, and having no redness about it; or it has ulcerated, and the skin around it is inflamed, and if the epidermis is not broken in raising the sticking plaster, there is seen a small flat vesicle containing lymph or pus, surrounded by an inflammatory zone. Occasionally, but very rarely, the inoculated point does not become inflamed during the first three days, but on the fourth or fifth a pustule suddenly forms.

When the inoculation has taken to this extent, the evidence required is obtained. The suspected sore is certainly of siphilitic origin. And, if circumstances are not present to contra-indicate the use of mercury, a mercurial course should be immediately commenced.

It is needless to say, that if the appearance of the suspected sore and its history are such as to make it more probable that it is siphilitic, the mercurial course should be commenced at once, as it does not interfere with the production of the artificial sore.

Then comes the consideration how to get rid of the minute artificial sore. For this purpose it is necessary to apply to it well and sufficiently the nitrate of silver, pencilling the sore with a pointed stick of lunar caustic, so that the texture may be destroyed to the depth of half a line. The sore thus treated, at its origin, will certainly heal. If, however, through the imperfect application of the caustic, it does not heal, but, on the separation of the slough, it presents the same appearance as before, caustic must be re-applied.

Another objection to the test of inoculation is, that it may fail when the case is really siphilitic. But the force of this objection is lessened when it is considered that we can determine the circumstances by which failure is liable to be caused. They are the following:—

a. The secretion having been accidentally removed from the surface shortly before inoculation.

b. The character of the sore having been changed by escharotic applications.

c. The character of the sore having been changed by inflammation or sloughing.

d. The nature of the secretion having changed through time. I have seen two cases of indurated chancre, one in a female, the other in a man, in which I obtained no artificial sore by inoculation. But in the first of these, secondary symptoms followed; in the second, they had already manifested themselves. The common point in both was, that the sores had been there many weeks. Both were treated with mercury.

Thus, M. Ricord's test of inoculation is in most cases not required; and, when resorted to, must be used with great circumspection; for, if its results are affirmative, the artificial sore requires particular vigilance in its management; and,

when negative, the failure to produce a second sore can by no means be regarded as entirely decisive of the nature of the first. With these restrictions, however, and taken as a supplementary means of diagnosis in certain doubtful cases, M. Ricord's test has great utility. It enables one, for example, in a case of strong suspicion, at once to begin mercury, by superseding the necessity of preserving the natural appearance of the sore as a guide in the diagnosis. And again, in cases where the suspected sore begins to heal in a few days after the commencement of the treatment, the result obtained from inoculation, helps one to decide whether the further use of mercury is necessary.

Medical Gazette, Dec. 3, 1841, *p.* 376.

87.—*Opium in Strangulated Hernia.* [In Retrospect, No. IV., Article 66, will be found a notice of the opium treatment of strangulated hernia. Mr. George Cooper, of Greenwich, has published two more cases in which this treatment was equally successful. In one, 4 grains of opium were given, which relieved the pain and sickness, but produced no alteration in the tumour. In four hours the same dose was repeated, and again in five hours. The next day the symptoms were relieved, but the hernia continued in the same state; after the bowels had been opened, however, the patient quickly recovered, and the hernia gradually disappeared. In another case of strangulation, two grains of opium were given, with the effect of relieving the pain and sickness; and five hours afterwards, two more grains. The following morning the hernia was gone.]

Medical Gazette, Feb. 18, 1842, *p.* 836.

[Dr. Emsmann recommends the administration of injections containing six ounces of the aqua saturnina, in cases of strangulated hernia, where the ordinary means have failed. They may be administered every eight or twelve hours, and the taxis should be resorted to, three or four hours after each injection. This method, may indeed be tried, if necessary, but we should doubt its efficacy.]

Hufeland's Journal, 1841, *p.* 62.

MIDWIFERY.

88.—ON ADHESIONS AND STRICTURES IN THE VAGINA DURING PREGNANCY AND LABOUR.

By Dr. Doherty, Dublin.

[In the sixteenth volume of the Dublin Medical Journal, this subject is treated, by Dr. Kennedy, as it is found to exist in the unimpregnated female; and Dr. Doherty, in a clever paper in a more recent number of the same Journal, treats of the affection as it occurs in the impregnated female. Adhesions and strictures of the vagina may no doubt frequently exist in the virgin subject, as well as in one who has been previously impregnated and undergone parturition. When it occurs in the latter subject, it will generally be the result of pressure or injury during labour. The walls of the vagina may become glued together either at one point or throughout the whole surface, or bridles of lymph may be found in different parts. The formation of these cicatrices somewhat resembles the same process from burns.

"The most usual complication is a falciform band encroaching on the area of the vagina, or one or more rings of cartilaginous hardness, either traversing its whole circumference, or only contracting a segment of it: and with these there is too frequently found a vesical fistula." If the constriction is slight, it will not be necessary for the practitioner to interfere much during labour.

The relaxation of the parts will almost invariably be sufficiently accomplished by the judicious use of tartar emetic, given in nauseating doses. In most instances, this practice will entirely supersede the use of the lancet. Cases of the greatest rigidity, almost resembling a "cylinder of iron" round the finger, have been relaxed by this medicine in less than six hours. Sometimes, however, a perfect occlusion exists, and in this case we must have recourse to an operation, which must at all times

be dangerous on account of the proximity of the bladder on one side and the rectum on the other.]

"The best instrument," says Dr. Doherty, "which we can employ, is a straight bistoury, covered throughout with sticking plaster, except over a small portion of its extent. It can be safely introduced by carrying its flat surface along the finger, passed into the vagina. In making our incisions we should never allow them to go beyond the sixteenth of an inch in depth at once, and we should frequently withdraw the knife and make a careful examination of the progress we have made. A pair of flat wooden spatulas, introduced one on either side, will by keeping the parts asunder, facilitate the operation. It will also be found a useful precaution to pass the finger of the left hand up the rectum, in order that we may judge how far our incisions may be carried without endangering that intestine; and it is a matter of prudence to avoid, as much as possible, cutting towards the bladder, lest from its close proximity and intimate connexion with the vagina we open into its cavity. Having thus, step by step, and with the utmost circumspection, separated the adhesions as far as we think prudent, we should wait until the opening has had an opportunity of dilating under the pressure of the presenting part, when, if the head be still prevented from descending we may endeavour, in the same cautious manner, to enlarge the canal a little more."

Dublin Journal of Medical Science, March 1842, *p.* 70.

[The next question is, how long are we to wait before operating, when only a severe constriction exists, and when the child's head must of necessity tear through the parts, if those parts are not artificially liberated.

We must remember that in all severe constrictions of the vagina, its parietes are not the only parts implicated. The neighbouring viscera will frequently too be adherent, and therefore any laceration of the vagina will also lacerate those viscera: hence the necessity of timely interference with the knife or other instrument when we feel convinced that the head will not pass without this. The constriction should therefore be nicked in two or three places, the incisions never exceeding the sixteenth part of an inch in depth, and being directed laterally or backwards rather than forwards, and the finger of the left hand at the same time being kept in the rectum as a

guide. Dr. Rigby recommends that this should be done during a pain when the patient will probably be unconscious of the act; but the correctness of this practice is certainly questionable, as few patients can be sufficiently quiet on such an occasion for the surgeon to be particular in the depth and extent of his incisions: and moreover the incisions might be very suddenly enlarged if made during a pain. On all these occasions we are not warranted in resorting to an operation till we feel convinced that relaxation of the parts has been carried to the utmost, and that any further delay might produce laceration.]

89.—REMARKABLE CASE OF RIGIDITY OF THE OS UTERI.

By Edward James Shearman, Esq., Rotherham.

On April 10, 1834, I attended a lady, at some distance from my residence, of her second child; her age was 25; of a decidedly hysterical habit. I found the liquor amnii had been dribbling away for some hours before I saw her, together with a large quantity of blood, with every pain, which was very slight. On examination I found the os uteri dilated to the size of a crown piece, and the fingers of the fœtus just protruding through it, so as to completely fill the opening; the os uteri was not dilated in a ring, as it ought to be, but had two fissures in it, at opposite sides, as if it had been torn, and as hard as a scirrhous uterus. The pains increased rapidly; I tried to gradually dilate the os uteri with my fingers, in order to be able to get hold of the feet of the child, but found it quite impossible; the lady kept losing a large quantity of blood, with every pain, and I found it quite impracticable to make any impression on the uterus. Knowing that every pain she had made it more difficult for me to turn the child, and as her pulse was not very low, I took some blood from her arm, and gave her a large dose of opium, with the intention of putting an end to this spasmodic action (as I conceived) of the os uteri. The opium made her sleep, but the hæmorrhage continued; and the os uteri remained as hard as ever. At last my patient became faint; I took this opportunity of trying to overcome the state of the os uteri with my hand, but found it quite impossible; I might as well have tried to enlarge a piece of earthenware of the same size. The arm of the child had now come

down into the vagina; I was alarmed; she was bleeding to death; I sent for another practitioner; and contented myself with the application of ice and cold, in every possible manner, and plugged up the vagina, keeping a thorough draft of cold air blowing over my patient. I was afraid of giving the ergot of rye; indeed, I did not see what good it could have done. My friend came; the bleeding continued; he tried to dilate the os uteri, and failed. We agreed to watch, and wait for any opportunity that might occur. We gave her more opium, and used ice, keeping her alive with wine and water, and gruel. Twenty-four hours glided away, when I, on examination, detected a placental presentation with the arm; the os uteri having yielded to our efforts slightly; this made us more anxious for its dilatation; we used our utmost efforts, to no avail; we watched twenty-four hours more, the bleeding occasionally occurring to an alarming degree, until complete syncope came on again. The next day the bleeding was not so excessive, but the os uteri remained the same. At last, on the 4th day, the pains became very violent, and the blood was rushing out of the vagina more like water out of a pump than anything else I can compare it to; syncope came on to a great degree; the os uteri gave way; I got hold of the feet of the child, and delivered as quickly as possible, fully expecting my patient was dead. As soon as she could swallow, we gave her a strong dose of decoction of ergot of rye, with brandy. I kept my hand in the uterus, to keep up as much contraction as possible, until the ergot began to act, when the placenta was expelled by the uterine efforts; we kept her under the influence of ergot for some hours; she rallied a little that night, and eventually recovered. I took great care to keep the rectum and bladder empty throughout the whole attendance.

During these five days I consulted every work on midwifery that had been published, and could find no allusion to this state of the uterus in any of them, except in Dr. Blundell's Lectures published in the Lancet; and there he evidently had never met with a case so obstinate, and is advice his to wait, and seize the earliest opportunity to dilate. It occurred to me that the irritation of the arm of the child might bring on this sort of permanent spasmodic action of the uterus; but in two years afterwards, the same lady was taken in labour again with the very same symptoms, but a presentation of the placenta

only, and a little more than seven months' pregnancy. On this occasion I was confined with her for more than a fortnight, and only dare leave her when the state of syncope was so great as to stop the uterine action. On one occasion I left her for about four hours; her husband rode after me; and when I arrived, I found her bleeding to a most alarming extent; the uterus in the same horrid condition; I fully expected her dying every instant, indeed she only just breathed; I plugged up the vagina with sponges dipped in iced water; made great pressure on the os uteri from the vagina, and also pressed over the uterus very strongly from the abdomen; I dare not give any stimulus to the stomach, and contented myself with external stimuli; she rallied again in some hours, and it was three days after that before the os uteri gave way. I then instantly passed my hand by the placenta, got hold of the feet, and delivered. In each of these cases I found less difficulty in turning the fœtus than I expected; the uterus at last seemed to be quite exhausted, and gave way to my efforts. I cannot too highly extol the virtues of the secale cornutum in these cases; it brought on muscular action in the uterus at once, and evidently preserved the life of the woman when nothing else could.

Since then I have had the same lady in the same state again, with placental presentation and twins; and another patient (a very hysterical woman) with placental presentation, and the same scirrhous-like feel of the os uteri, which occasioned me very great anxiety, and occupied my whole time for nearly a week.

Provincial Medical and Surgical Journal, March 5, 1842, *p.* 449.

[We believe, as the Editors of the *Provincial Journal* state, that "M. Dubois has, in several cases of the above kind, divided the neck of the uterus with the best effects;" and, certainly, we should not hesitate, where the life of the patient must be all but sacrificed, to make some such effort to relieve her. At the same time, where the os uteri had dilated to the size of a crown piece, we suspect that by cautious efforts it might have been dilated more: and, if the plug had been used in the way we have previously recommended, it would have been found a very efficacious way of checking the hæmorrhage; i.e., not by one or two large pieces of rag, but by one small piece after another, so as to fit them accurately to the mouth of the womb,

and so on till the whole of the vagina is most completely plugged. When this is done effectually, we can assert after very long experience of its efficacy, that few cases of hæmorrhage need be dreaded. Of course, in the above case, this would only have been a temporary remedy, but would have given more time for other steps to be taken. We have often thought, that the beautiful process of dilating the urethra, as first practised by Dr. Arnott, might be of great service in these cases, and in many others which require manual interference to obtain dilatation of the os uteri.]

90.—ANTE-VERSION OF THE WOMB CURED BY POSITION ALONE.

By Dr. Godefroy, Professor of Midwifery, Rennes.

[In this case the usual symptoms of ante-version were present, and Dr. Godefroy not being able to see her immediately, gave the following directions:]

He advised her to be put on the side of the bed, with her head and hands on the floor, and with only the anterior part of the thighs and legs resting on the bed. He says, that in this position the intestines are drawn towards the diaphragm; that the pelvis is consequently emptied, and the uterus being no longer pressed upon, resumes its normal situation. And this is what happened to the lady in question. She had scarcely been fifteen minutes in the above posture, when all painful sensations subsided. She then went to bed, where she was when Dr. Godefroy saw her, two hours after her attack. At this time she only complained of a feeling of weariness in the pelvis, with heat of the external parts. He did not practise the toucher. Being so delighted with the result of this case, he determined to try the same position in the next case that he saw, which was not till October, 1841.

Case 2.—Madame C., between three and a half and four months pregnant of her first child, 33 years, and well formed, was seized, on the 27th October, 1841, with a feeling of weight in the pelvis, and with frequent calls to make water. She went to bed, but did nothing else. She was able to get up next day. Dr. Godefroy was sent for on the morning of the 29th, as she thought she was going to have a miscarriage. He found similar symptoms to those already detailed in the first case. Upon

examining her by the toucher, the neck of the uterus was felt behind and towards the curvature of the sacrum, while the fundus was in front and behind the pubis. As the bladder did not appear full, the catheter was not introduced. The patient was placed in the position recommended, viz., the head and hands on the floor, with the front part of the thighs and legs resting on the bed. Dr. G. was witness of the progressive improvement observed in this lady; at first the feeling of weight in the pelvis diminished, and then the desire to void urine ceased. As the position was very fatiguing, she was supported by the shoulders. She was kept for twenty minutes in this posture. Upon her lying down again in the bed the uterus was felt by the toucher to be in the natural position. He is anxious that his medical brethren should adopt the same mode of treatment in similar cases, until it can be seen whether a more extended trial will sanction its employment.

London and Edinburgh Monthly Journal of Medical Science, March, 1842, *p.* 313.

91.—NEW OBSTETRICAL INSTRUMENT, THE KEPALEPSALIS.

By William Campbell, M.D.

[This instrument has been stated to be valuable in extracting the fœtus in cases of contracted pelvis, even when the distance from the promontory of the sacrum to the pubes is only one inch and an eighth. The late Dr. Davis of the London University invented an instrument to accomplish a similar purpose, which he called the *Osteotomist,* which can be used when only one inch intervenes between the sacrum and pubes, thus "reducing to zero the necessity for performing the cæsarian section", and so extraordinary is its power, that it would cut through "beef ribs". Mr. Simpson, of Edinburgh, seems to have invented an instrument of somewhat different construction, which is described as follows:]

The kepalepsalis is so constructed that it may be applied with perfect safety to the maternal structures in any pelvis with a space of only one inch and an eighth between the promontory of the sacrum and the symphysis pubis: it cuts out the piece of bone within its grasp with such facility, as to require but a very moderate degree of power from the operator; it is capable

of removing large portions of the skull in each successive application, whereby our object is attained with comparative expedition; and finally, while one or more portions of bone, after being separated, are still lodged in the instrument, other pieces may be cut away, and the whole simultaneously extracted by the instrument itself; thus superseding in this part of the process the use of the fingers. The only difficnlty that can be experienced in the application of this contrivance is one inseparable from every case in which such aid can be required, whether the confinement of the pelvis be extreme or not; viz. placing, during its successive applications, the presenting part of the cranium within its grasp. If a plate of mahogany, or of any other kind of hard wood, the thickness of one of the cranial bones of the fœtus, be covered with thick chamois leather, and placed within the grasp of the kepalepsalis, the great ease with which the included portion is cut through will afford a good idea of the powers of this agent.

The following is a description of the Kepalepsalis in Mr, Simpson's own words :—The length of the instrument is thirteen inches and a half; that of the cutting part two inches and a half; and of the handles eleven inches. It is formed on the principle of scissors, but differs from them in so far that, instead of making a division, it effects the separation of the entire portion placed within its grasp. This is effected by continuing the outer blade round the extremity of the inner one, and returning it along the opposite side, as far as the joint or screw, where it forms one solid piece with the handle. When open, the blade resembles a box, two inches in length and half an inch in width, into which the inner blade is accurately fitted, and the cutting action is performed by the edges or corners of this blade passing those of the outer one into the box, as the handles approach each other. It will with equal ease remove a piece about the size and shape of the index finger, and half an inch wide; or the most narrow portion it may be necessary to detach, as from the peculiar construction of the blades they cannot be thrown from their acting position.

Lancet, March 12, 1842, *p.* 823.

[On examining the description of the Osteotomist of Dr. Davis, we do not perceive how the instrument used by Dr. Campbell will be much more advantageous. Dr. Davis describes his Osteotomist as follows.]

The smallest measure of pelvis compatible with the extraction of a dead child piecemeal, by the natural passages, without great risk of danger to the mother from the force used in the operation, has been more disputed than positively determined. I have known examples of fœtal heads so large, even after being opened and evacuated, as not to admit of being brought down through the superior aperture into the cavity of the pelvis without the exertion of considerable force, even with a conjugate diameter of little less than three inches. With a conjugate diameter of two inches and a half, the extraction of the basis of the fœtal skull will necessarily be attended with much additional difficulty. Where the same diameter is no more than two inches, then the attempt to extract a full-grown child by the natural passages by means of the crotchets used with much force for a long time together, would expose the soft parts to much risk of contusion, and the woman herself to the eventual loss of her life. There must be limits somewhere to the safe use of the crotchets, and these limits should exclude even an approach to a violent exertion of attracting force. The expedient I have to propose for the relief of such cases, and as a substitute for the exertion of inordinate force in their treatment, is a power by which any portion of the fœtal skeleton presenting at the brim of a contracted pelvis may be broken into small fragments of about half an inch in diameter, with the most perfect impunity to the structure of the parts of the mother. As far as I know, it is an example of a new application of mechanical power, combining the principles of a punch and a pair of scissors. The whole instrument is made of solid and well-tempered steel; its cutting ends are worked into two long and fenestrated oval rims of unequal size, but of nearly equal strength. The smaller is of a size to enter into and to fit closely within the parietes of the larger. The mutually adapted parts of each being formed into a continuous oval edge, they become competent, when brought together, and firmly applied to their object, to exert a prodigious power upon a portion of bone placed within their grasp.

Its cutting edges are protected by being inclosed within the level of the thicker parts of their respective rims, which are everywhere rounded and polished into smooth surfaces, without points, angles, or projections of any kind.

The handles are of great length in proportion to the parts

anterior to the joint, and being of sufficient strength to be perfectly inelastic and inflexible, their power must be deemed equal to the full length of their leverage.

[Dr. John Davis, referring to this description of his father's instrument, says:]

The power of the instrument is such that it will, as my father was in the habit of demonstrating to his pupils, remove sections from a rib of beef, provided those sections correspond in length with half the length of the cutting portion of the instrument; the strength of the handles, moreover, must be such as to prevent the action of elasticity from coming into play. The thinner portion of the skull may be removed in sections corresponding with three-fourths of the entire length, and those constituting the base being thicker in sections corresponding with the two-thirds of the entire length of the cutting portion of the instrument.

"One or two sections," observes the author, "taken out by the osteotomist from the basis of the skull, the most bulky part of the cranium, will generally put an end to all difficulty in the delivery by the crotchets. In cases of greater confinement, a few additional sections will perhaps be required to be made in order to give a sufficient degree of facility to the after-part of the operation.

The extreme breadth of its broader oval rim is three-quarters of an inch. I may, therefore take it for granted that wherever there may be sufficient space to admit of the introduction of this instrument, together with the point of an index finger to protect the soft parts, and to feed it with successive purchases of bone, it will be practicable to effect, and therefore prudent to attempt, delivery by the natural passages. There are few pelves, even in large collections of distorted ones, so small as not to furnish from between one and one inch and a half of conjugate, or at least of antero-posterior diameter across some part of their brim. In any such cases I should think it my duty with the osteotomist to undertake the delivery by the natural passages."

It is perfectly true that deliveries were accomplished through the carved representation of the pelvis of Eliz. Thompson, exhibiting a conjugate diameter of only one inch; but here, as my father observes, there were no soft parts to interfere with the free movements of the operator, and which, under the circum-

stances of an operation on a living subject, would require to be guarded with the strictest care against exposure to violent pressure of any kind.

"In making use of the osteotomist, the operator is recommended to be as gentle as possible in every change of position of the hand within the pelvis, and even in the movements of the finger or fingers employed by him to guard the soft parts of the mother and to feed the purchase part of the instrument: inattention to this recommendation will be productive of contusions and lacerations, the common results of quick movements and forcible efforts."

Its cutting portion measures one inch in length and five-eighths of an inch in width, and exhibits an oval outline. The entire length of the instrument is exactly twelve inches; the length of the handles eight inches and two-eighths. In one of the plates of the work quoted, an outline is given of the purchase part of a very small osteotomist, such as may be obviously used in very confined space; the handles or shanks of such an instrument being intended to be made on the scale of the common osteotomist.

For several years my father has had a decided preference for the use of another variety of osteotomist, competent to remove long sections through and in different directions across the fœtal skull; the reason for my father's preference having been, that by this longer section the bones were sooner made to collapse under the attracting force applied by the crotchets, the process of lessening was much shortened, and the delivery was thus more speedily and safely accomplished.

The entire length of this last specimen of the osteotomist is thirteen inches; the length of the cutting portion two inches; width of cutting portion five-eighths of an inch.

Another form of osteotomist competent to remove curved sections is also figured in the work, but this has very rarely been employed.

Ibid, April 9, 1843, *p.* 46—48.

92.—ON THE CONTRACTION OF THE WOMB.

By Dr. Alison.

In a paper read before the Medical Society of London, Dr. Alison proceeded to say that the expulsory efforts of the womb

were excito-motory movements; the contents of the womb were the stimuli, and the womb was the organ stimulated: labour, at the fortieth week of utero-gestation, depended on the accession at this period of great acuteness in the nerves of impressibility, or, as they were called, of organic sensibility, by which the impressions made by the embryo were readily experienced, and conveyed to the nervous centre, where the nerves of motion became stimulated; of great activity in the corresponding motor cords of the uterus proceeding from the nervous centre, and on the full and perfect development of the contractile fibres of the uterus. The nerves of impressibility after ramifying in the womb, joined the sacral nerves, and proceeded to the spinal marrow, perhaps, to the brain itself. The nerves of motion proceeded certainly from the spinal marrow, and, perhaps, from the brain, and forming part of the sacral nerves reached the uterus. That these nerves proceeded to and from the brain itself, was rendered probable by the inactivity of the uterus, when the brain was in a state of inaction, as during coma, apoplexy, complete narcotism, and depression of the skull, and by the preternatural activity of the contractile structure of the womb, ending in preternatural delivery, premature labour, or abortion, during the condition of irritibility of the brain, whether from strong mental emotion, mania, delirium tremens, or the early stage of febrile diseases. That these nerves pass into the structure of the spinal marrow, is evinced by the derangement of their action, attendant upon division of that part of the spinal column. The impressions conveyed by the nerves of impressibility were usually communicated to the motor nerves or fibrils in the spinal marrow, and perhaps in the brain also. It was suggested that the impressions to the motor fibrils might take place in a third part also, viz., in the womb itself; and this opinion obtained some countenance from certain movements of the gravid uterus which had been alleged to take place after the separation of that organ from the body under the application of stimuli. This connection of impressions in the organs themselves would enable the physiologist to account for the *post-mortem* movements of the heart, stomach, and bowels, after separation from the body, on the application of stimuli, without reference to any inherent contractility in the fibres, independent of the nervous system. The termination of the fortieth week of utero-gestation was the only season at

which the contractile efforts of the womb were strictly natural; but these efforts occurred on other occasions, both in the unimpregnated and in the impregnated uterus, leading to the expulsion of false membranes, moles, and hydatids, to abortion and to premature labour. These latter contractile efforts depended on the preternatural presence of that active condition of the nervous structure subservient to the womb, which occurs only in health, at the fortieth week of utero-gestation. Preternatural activity of the womb, as well as inaction of that organ at the proper season for labour, was referred to certain morbid conditions which might exist in the brain, the spinal marrow, in the nerves, in the contractile fibres of the uterus, or in the embryo itself.

Lancet, Dec. 18, 1841, *p.* 416.

Dr. Marshall Hall observed on this subject,—That there could be no doubt that the action of the uterus in parturition was a function of the spinal marrow, as distinguished from the cerebrum and the ganglia, the other subdivisions of the nervous system. M. Olivier had related a case of parturition, perfect in every respect, in a patient suffering paraplegia; the disease was one of hydatid tumour pressing the spinal marrow, between the first and fourth dorsal vertebræ. M. Brachet had detailed a case of paraplegia in which there was complete inertia or inexcitability of the uterus, and though former accouchements had been speedy, it was in this case necessary to use the forceps. The seat of the disease was not mentioned, but he (Dr. H.) imagined that it must have been so low in the lumbar region as to have interfered with the reflex uses of the incident and reflex nerves of the spinal marrow. There were several interesting facts which bore upon this subject. In the common hen, an egg was deposited prematurely, if the border of the cloaca were irritated by a few grains of salt. If the tail of the turtle were separated from the rest of the body, together with the cloaca in the ordinary manner of the cook, and if the cloaca were distended with water, this water gushed out on irritating the integuments a little higher than the sphincters. The lower portion of the abdomen of the libellula deposited eggs in the proper season on being shaken about on rough paper. There were cases on record of the human fœtus born after the death of its parent, the spinal function having survived

that of the brain and of the heart; these facts bore out the views of the author of the paper.

Mr. Pilcher thinks that uterine contractions are essentially connected with excito-motory action. Mental impressions sometimes induced and sometimes prevented uterine contractions; and this proved a connection between the brain and the uterus, the same which existed between the brain and other parts. The excito-motory nerves terminated in the grey matter of the medulla spinalis, while the nerves of volition and sensation ran up into the brain itself; the investigations of Grainger had decided this point. Grey nervous matter, wherever situated, elaborated nervous force; the ganglia formed a beautifully-connected chain throughout the body, subservient to excito-motory action. Mr. Pilcher agreed with the author of the paper in regarding the fœtus as the stimulus of the uterus. The medulla spinalis might be regarded as a chain of ganglia. The locomotion of man was occasionally excito-motory. In the lower animals, such as the rabbit and hare, the sole of the foot was very insensible to ordinary impressions, but the slightest touch upon the hair or fur on the back of the part would induce excito-motory actions, even when the animal had been dead for some time. At this period the nerves were large, and it was well known that the nerves in the heel in man were large also, and that ganglia were found here and there. In man, the will commenced the locomotive efforts, and these afterwards became excito-motory, and independent of the mind of the individual. The impressions made upon the sole of the foot excited the ganglia of the part, and these roused to action the muscles of the members; it was thus that the merchant, absorbed in commercial transactions, walked unconsciously, and passed his own door.

On this subject Dr. Marshall Hall observes, that—On removing the cerebrum certain phenomena are removed; these were those of sensibility and of voluntary motion. Those actions which he (Dr. H.) would beg to call spinal rather than excito-motory, and those of the ganglionic system remained. On removing the spinal marrow, the spinal actions or excito-motory phenomena ceased in their turn; the function of respiration ceased, deglutition and the action of the sphincters were annihilated, with all those actions which had been denominated

sympathetic, and a series of facts observed by Redi, Whytt, and others. If the experiment were properly performed on the frog, the circulation might remain vigorous, and might be effected through the medium of the ganglionic system which now remained alone. However familiar the acts of ingestion and of egestion, and the actions termed sympathetic, had, of course, long been, they were not formerly referred, distinctly and exclusively, to the spinal marrow. Now, that the action of the uterus in particular was a spinal action, seemed to be proved by a variety of circumstances. The whole of the act of parturition, and therefore the art of midwifery, depended on the principle of the spinal marrow, or excito-motory action. An interesting fact afforded a point of this view of the subject; in protracted uterine hæmorrhage a douche of cold water, induced sudden contractions of the uterus, and arrestation of the hæmorrhage. Might not lingering labour be hastened by the same measure? Another fact of the same kind was that of the introduction of the hand within the uterus, well known to practitioners of midwifery. The effect of the douche in uterine hæmorrhage was not that of the mere application of cold; the constant application of ice produced no such effect; it was the sudden change, the sudden impression on the nerves, which induced contraction of the uterus, just as the dashing of cold water on the face, or on the general surface, induced sobbing inspirations. The same principle would guide us in the treatment of syncope and asphyxia. The surface to which the douche was applied should be first warmed; the impression of the cold might then be secured.

Mr. Procter believed that the application of cold in connection with uterine action was highly important. The douche applied from a distance produced remarkable effects; he had introduced his hand into the uterus on some occasions, but he regarded this mode of proceeding as of questionable utility; he preferred pressure with the hands upon the abdomen. In one case the uterus contracted well after delivery, but a few hours subsequently it was found that this organ had been relaxed, and was distended with blood; pressure with the hands upon the abdomen in this case was useful. He recommended pressure, together with the application of cold from a distance, in cases of non-contraction of the uterus after delivery.

Ibid, Jan. 1842, *p.* 481.

93.—HÆMORRHAGE AFTER DELIVERY ARRESTED BY THE APPLICATION OF COLD WATER TO THE INTERNAL SURFACE OF THE WOMB.

By Dr. Hecking, of Coblenz.

A weak and delicately made woman, soon after she had been quickly and easily delivered of twins, began to have more than usual hæmorrhage from the uterus. Permanent pressure on the abdomen, with friction over the uterus, and repeated dashing with cold water were employed, but they were all ineffectual, and the hæmorrhage grew more rapid. The author therefore introduced his hand into the uterus, (after having dipped it in cold water,) and doubling his fist, endeavoured, first, by rubbing the parietes, and then by compressing them against his other hand, which was placed on the walls of the abdomen, to bring on contraction of the uterus. But this plan also was altogether useless; the uterus, still remaining distended, was every instant filled with fluid and coagulated blood. After all attempts had proven vain, and when the patient's danger was now extreme, the author took a sponge dipped in cold water, and then squeezed it on the internal surface of the uterus, so as completely to wet it all over, at the same time maintaining the external pressure. As often as the sponge became covered with coagulated blood, it was taken away, washed with cold water, and again introduced as quickly as possible. By this means several times repeated, (for in the powerless condition of the patient it was not a difficult thing to do), the hæmorrhage was at last arrested, and the woman's life was saved.

American Journal of Medical Science, Oct. 1841, *p.* 495.

94.—CASE OF GRAVID UTERUS PASSING INTO THE SAC OF AN OLD INGUINAL HERNIA, IN WHICH THE CÆSAREAN SECTION WAS PERFORMED.

By Theophilus Fischer, M.D.

On the 12th October, 1832, Magdalene Münger, 44 years of age, from Wohlen, living in the parish of Kœnitz, was taken as an urgent case to the surgical department of the hospital (Insel) at Berne, under the superintendence of Dr. Isenschmid, (professor of surgery,) in whose absence, at that

time, the duties of the institution were conducted by the author of this paper.

Upon examining the patient, it was found that she had had seven children, six girls and one boy. Ten years previous to her marriage she had an inguinal hernia on the right side, which was neglected, she having never worn a truss. In every pregnancy the woman suffered much inconvenience from the hernial tumour, which frequently became very large.

She was now pregnant of her eighth child, and at the sixth month of her pregnancy. The hernia had been incarcerated for several days previous to coming into the hospital, but her sufferings had been subdued by cataplasms of linseed meal and cold applications, by which means the hernia was reduced. After the hernia was reduced, the most severe pains came on suddenly in the whole abdominal region, in the loins and lower extremities; and, during these pains, the impregnated uterus got out of its natural position and protruded through the inguinal ring, covered by the hernial sac. The gravid uterus was easily distinguished, and of an egg-like form resting upon the thighs to the length of eight inches downwards, and six inches in circumference. The woman, lying upon her back, was free from pain. No menstrual discharge had taken place for six months. On examination per vaginam, the os uteri was found, as is generally the case in pregnancies of six months, only a little retracted, higher and more inclined to the right side. The functions of the bladder and rectum were natural. The abdomen was small, relaxed, and wrinkled. By applying the stethoscope to the lower and anterior part of the tumour, and placing the ear on the orifice of the instrument, regular pulsations were discoverable. From this time the patient never abandoned her bed, always maintaining her position on the back: and in this position she was tranquil, and had no return of pain up to the full period of her pregnancy, although the dimensions of the uterus gradually increased to such a degree that, on the 19th January, 1833, it measured 25 inches and 2 lines in circumference, and in length 22 inches and 10 lines, the circumference at the base being considerably smaller. On the above-mentioned day, at six o'clock in the evening, the woman felt herself unwell; she had pains in her loins and abdomen, and contractions of the uterus; the orifice of the uterus became dilated, and, between six and seven o'clock, the waters

per vaginam escaped, upon which the pains increased prodigiously. In consultation, Dr. Leuch decided upon performing the cæsarian section, which he performed about nine the same evening, in the presence of Professors Isenschmid, Hermann, Emmert, the medical men Nichans, Fischer, and some students.

The woman, placed on her back, Dr. Leuch standing on the right side of the patient, formed on the lower half of the tumour a fold of the integuments on the right side, making an incision longitudinally, seven inches in extent. By a second incision he opened the hernial sac, and the fundus of the uterus; the placenta, which adhered at this part, was divided by the same incision, and bled profusely, after the opening into the uterus was enlarged. The membranes were also divided, out of which the remaining part of the waters ran. The operator then introduced his hand, and found a living, healthy, well-formed child, with its head at the fundus of the uterus, and with its feet towards the hernial ring. The funiculus umbilicalis was divided and tied, the placenta detached, and the child given to the care of a nurse. The wounded uterus bled very much, and retracted itself to at least three-fourths of its former extent. The wound of the integuments was now made clean, and brought together by ligatures. At the lower part an opening was left, to admit of the escape of blood. Upon the incision were placed some straps of adhesive plaster, and compresses of lint, and the whole secured by a spiral bandage lightly. The patient being now made clean, was left to rest. Her countenance was pale and shrunk; on a sudden she had hiccup, and severe pain in her back and loins; her pulse was weak, and she had given to her a draught of Liq. Anod. Miner. Hoffm. Tinct. cinnamon. et Tinct. opii.

Before midnight the bandage was made looser on account of severe pain; and at two hours after, the bandage was removed entirely. A small artery bleeding, shewed itself in the hernial sac, and some coagulated blood was found in the cavity of the uterus and its vicinity. Towards the morning of the 20th of January, the patient was more quiet, but very weak, and ether was given to her. On that day a constant vomiting followed after every thing she took, without distension and sensibility of the abdomen; and with these symptoms the patient died at between three and four o'clock on the morning of the 21st. The *sectio cadaveris* was made thirty hours after death.

The circumference of the tumour, taken horizontally, measured 17 inches; and longitudinally, 21 inches 9 lines, and the base 18 inches 8 lines. In the cavity of the abdomen it was discovered that hæmorrhage had taken place from the wounded uterus—the ligature applied to the incision of the hernial sac being found in its proper place. The inguinal ring was so much extended as to admit an open hand to pass through with ease. The hernial sac was above, and to the right, and the uterus below, and to the left part of the ring. The incision in the uterus was found to the right, and in front. The colon was found detached, but lying in the hernial sac, and measuring 12 inches in its outer circle. A small fold of this intestine was found adhering to the inguinal sac posteriorly. The pelvis was large, and well formed.

The infant is still living, and healthy.

London and Edinburgh Monthly Journal of Medical Science, Jan. 1842, *p.* 28.

95.—PRECAUTIONS TO BE USED IN DETECTING KIESTEIN.

By H. Letheby, Esq., A.L.S.

The urine should be procured at a time when the woman is as free from disease as possible; and I believe that passed early in the morning, after rest, gives the least variable indications. This should be exposed, in a tall narrow glass, to a continuous temperature of about 70° of F.; if a much lower temperature than this is used, say about 40°. I have known the urine to stand for more than a fortnight without undergoing any change, although it be replete with kiestein or its principles, at a temperature of 70°. However, if the woman be pregnant, we shall observe, in two or three days, the first indication of its presence by the urine becoming turbid. In a day or two more a thin pellicle forms on its surface, and this gradually acquires consistence up to a fortnight from the onset of the experiment. But long before this time you will have noticed its characteristic odour; certainly not like cheese, to which Dr. Bird compares it, but precisely analogous to the smell of raw beef beginning to putrefy: it is emphatically a *putrid smell.* I have kept the urine more than a month after this, but it never loses either its pellicle or peculiar odour.

Besides the error likely to arise from the adoption of too low

a temperature, where the kiestein would not be separated, I would warn the earlier experimenter not to fall into the opposite error of confounding the pellicle which forms upon all urine on standing, especially that which contains the lithates in excess; the more so as the general as well as microscopic appearance of this pellicle is often precisely like that of kiestein. The appearance I am now alluding to, however, is never accompanied with the putrid animal odour; but, on the contrary, gives out a copious smell of ammonia, and when disturbed falls immediately to the bottom of the liquid. These are the two especial distinctions.

Medical Gazette, Dec. 24, 1841, *p.* 505.

96.—ERGOT PRODUCING ABORTION IN COWS.

In the neighbourhood of Trois Croix there has this season been an epidemic of abortion among the cows, which has caused much consternation among the farmers. M. Bodin, director of the school of agriculture, has discovered that the grains of rye, and many other of the gramineæ, contained a considerable quantity of ergot. This, he concludes, was the cause of the animals aborting. The observation merits attention, for it may be found that the ergot of all grains, as well as rye, produces the same effects.—*Journal de Méd. et Chirurg. Prat., Oct.* 1841.

[We are not aware that any experiments have been made with the ergot of any of the *Gramineæ* excepting rye, which, if true, is surprising, as many other individuals of the family are subject to ergot. Phæbus enumerates thirty-one grasses liable to it. "In the summer of 1838," says Pereira, "nearly all the grasses growing in Greenwich marshes were found ergotised. But the disease is not confined to the *Gramineæ*—the *Cyperaceæ* are also subject to it, and perhaps also the *Palmaceæ*."—*Ed. Month. J.*]

London and Edinburgh Monthly Journal of Medical Science, Jan., 1842, *p.* 73.

97.—REMARKABLE BIRTH OF TWINS.

By Dr. Schroder.

On the 16th of November, I was sent for, to a robust healthy woman, who, *three days before* had been delivered of a first

child about 29 weeks old, in order to remove the after-birth. I very soon discovered that there was a second child in utero. The woman appeared to be vigorous; there had been no pain since the birth of the first child; there was no hæmorrhage; the bladder was not distended; the situation of the child was not high, the head presenting; and I saw no reason for forcing delivery. I visited the woman several times, to ascertain the progress. *At last on the sixth day the second child was born*, and immediately afterwards the after-birth came away, without any assistance. Both children are living.

Vochenschrift fur dis ges. Heild., p. 849.

98.—ON THE PREVALENCE OF CALCAREOUS SALTS IN THE URINE OF PREGNANT WOMEN.

By M. Donne.

M. Donné supposes that the quantity of calcareous salts, commonly found in the urine, ought to be diminished during gestation, imagining that part of them is required for the formation of the bones of the fœtus. To determine this point, it would be necessary to know the normal quantity of the salts of lime, and then to compare the results with those furnished by the urine of women who are unquestionably gravid. To accomplish this object, pour into a graduated measure 50 parts of urine, and add to it 30 parts of hydrochlorate of lime, when a precipitate is obtained, which in normal urine ough to vary between 40 and 50 parts; so that in the urine of the pregnant woman its quantity will be much less, the greatest amount being 30 parts. Before making this experiment, it must be ascertained whether the urine be acid or alkaline; and if it is not alkaline, it must be made so, by adding some drops of ammonia. The precipitate which one ought to obtain is the phosphate of lime, a salt which is soluble in weak acids. In the same way the urine may be treated by adding a little of the water of barytes, when from normal urine a precipitate of the salts of barytes of from 12 to 15 would be obtained; and from the urine of a pregnant woman of from 5 to 8 parts. It is necessary to remark, that these precipitates are not got till the liquid has been allowed to remain at rest for about twelve hours.

It appears, then, that the difference in the proportion of the precipitates is very considerable, and not the mere result of chance. Donné convinced himself of this by a great number of trials. Thirty-six specimens of urine were brought to him,—of pregnant, as well as non-pregnant females,—and in two instances only did he make a mistake as to the class of patients to which each specimen belonged. It is well to state, that these specimens were from women in the obstetric clinical ward, where patients are only admitted at an advanced period of gestation. I have discovered pregnancy by this test, in three women in whom neither the *toucher*, nor auscultation, afforded any signs as to their condition, and whom this result proved to be in the family way. In one of these cases (that of a young woman, fifteen days behind her proper monthly period,) I sent a specimen of the urine to Donné, who found in it the peculiarity which we have noticed. This patient, however, had a miscarriage about a month afterwards, when the embryo, from its appearance, seemed to be in the third month. Donné observed a diminution in the calcareous salts of the urine, in a very remarkable manner, in a woman whose urine he examined for a totally different object. On the first occasion he found the normal quantity of precipitate; a short time afterwards, repeating his experiments upon another specimen, he discovered a notable diminution in the precipitate. From this he suspected pregnancy; and the result justified his suspicions, for she had an abortion three months afterwards.

We leave it to our readers to put what value they please upon this character of the urine of pregnant women: it is for them to repeat the experiments, which, as has been seen, are so easily performed.

Whatever truth there may be in it, we avow, that the theory which has conducted Donné to his researches, is a most attractive one. All authors who have written on embryology, consider ossification as taking place on the fifteenth or thirtieth day after conception. This new formation of osseous parts can only take place at the expense of the mother. It is, therefore, quite logical to endeavour to find out whether the calcareous salts of the urine of the mother are diminished.

Hitherto all the experiments made have been with the urine of pregnant women, as contrasted with those believed not to be so, but marriageable, and who, therefore, might be in that

state. We do not know whether the proportions which we have given would remain the same, were we to compare the urine of women pregnant, or supposed to be so, with that of men, children, or women above the age of child-bearing. This is an important point to ascertain; for it may so happen that the quantity of calcareous elements in the urine is not the same in individuals of the same age, of different sexes. Judging from the difference which exists in the form, structure, and composition of the bones in men and women, and in the young and the aged, this seems very probable.—Abridged from the *Annales d'Obstétrique, des Maladies des Femmes, et des Enfans, No.* 1, *Jan.* 1842.

London and Edinburgh Monthly Journal of Medical Science, Feb. 1842, *p.* 207.

99.—ON THE USE OF THE PLUG TO PRODUCE PREMATURE LABOUR.

By Dr. Scholler.

Two modes of producing premature labour are resorted to at the present day. Either the membranes are punctured, or a tent of sponge is introduced into the os uteri as recommended by Professor Kluge. The former method is liable to the objection of causing the too rapid escape of the liquor amnii, and thus endangering the life of the child when labour-pains are tardy in their occurrence. The second is often extremely difficult to accomplish, or even impossible when the os uteri is directed very much backwards, or when the patient has never before been pregnant.

Dr. Schöller was led to try the plug, from having observed that when used to suppress hæmorrhage in cases of placenta presentation or of threatening abortion, it had a considerable influence in exciting uterine action. He had observed also one case where its employment to restrain hæmorrhage was followed by premature labour which it seemed to have occasioned. He recommends filling the upper part of the vagina with balls of charpie, which for the sake of cleanliness should be renewed every twenty-four hours. The action of the uterus is usually very speedily excited, and when fully established, the plug may be withdrawn and secale cornutum administered to prevent the diminution of labour pains. The finger may like-

wise be used to aid the dilatation of the os uteri, but great care must be taken to leave the membranes uninjured. Five cases are related in support of this practice. In four the child was born alive, but in the fifth, in which the breech presented, the infant was still-born. The average length of time which elapsed between the application of the plug and the birth of the child was five days and fourteen hours.—*Medicinische Zeitung, Aug.* 18 and 25, 1841.

British and Foreign Medical Review, Jan. 1842, *p.* 249.

100.—NEW SUBSTANCE, GRAVIDINE, AS A SIGN OF PREGNANCY. By Dr Stark.

The fluid portion of the urine of pregnant women being drawn off, there appears a "natural sediment," which, whether held in solution, or separated by ether, has a striking resemblance to the serous globule, but when in a sedimentary state, bears an equally strong resemblance to the milk globule in recent milk. This substance differs from albumen and caseum, the two animal substances most analogous to it: from the former, in being soluble in water by means of heat; from the latter, in being soluble by sulphuric and nitric acids. From gelatine it also differs: first, in being precipitated from its solution in water on cooling; secondly, though partially precipitated by tannin, the precipitate was soluble in water on boiling. The author calls it "gravidine," both from *gravidus* big with young, occurring as it does in pregnant women; and also from *gravis* heavy, seeing that it falls to the bottom of the vessel. Kiestein is but the pellicle which results from the decomposition of gravidine. As the globules forming the latter substance are decomposed, urates and purpurates are developed in the urine; and when these have broken up and assumed new combinations, the triple phosphates appear, with that beautiful crystalline appearance, described by Dr. Bird, as one of the characteristics of kiestein.—*Edinburgh Medical and Surgical Journal,* No. cl. *Jan.* 1, 1842.

British and Foreign Medical Review, April 1842, *p*, 571.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

101.—ON THE SECRETION OF TUBERCLE.

By Thos. Hodgson Watts, M.D.

[One of the most interesting papers which we have lately perused, is this by Dr. Watts, on the above subject. We will endeavour to give an analysis of some of its contents, but cannot pretend to do it full justice in the short space which we can bestow upon it. It is acknowledged that there is a strong analogy between the secretion, from the vascular system, of a morbid matter, and a healthy secretion: and although there are many phenomena which are dissimilar, the process of healthy secretion will in some measure guide us to a true knowledge of the secretion of tubercle.]

The first solid compound of vital affinity beyond the boundary of health, is coagulable lymph, which follows in straight succession on the effusion of serosity; and in ordinary circumstances pus is the second. It is between the one and other of the two, that tubercle seems deservedly to occupy a place. The morbid preparation is, to appearance, nearly the same for all of them; and the secretion of each respectively may go on simply from the mass yet in circulation, or be attended with ultimate congestion of blood of a permanent kind. But beyond this they differ widely. The globule of pus is an orbicular membrane, full of a more fluid matter; organizable lymph puts on the cellular and fibrous arrangement; and tubercle, with all its points of resemblance to the former in the early periods, and to coagulated albumen, and particles of fibrine in the later periods, gradually changes from a fluid to a solid friable mass, only to soften again with the solution of the texture it occupies, resolving into globular bodies of considerable consistence, and sufficiently characteristic. When secreted, so like

the product of plasticity, and fully formed, resembling much that of suppuration—it yet attains to neither. It goes progressively through the course of generating, maturing, and softening tubercle; the ultimate symptom of scrofula.

[As it is known that every cachexia disposes to various disease and inflammation, so we know that tubercle has a particular relationship to its peculiar cachexia, and that a peculiar habit of body is necessary to its production: and as syphilis and scrofula have each their favourite localities, so has tubercle in some measure its particular localities, as for example, the lymphatic system, or the lungs and mucous membrane, or the serous cavities and joints. The appearances in tubercle, as seen by a microscope magnifying 500 fold, are as follows:]

In the maturer form of yellow matter, it presents the most satisfactory appearances. When compressed between the object glasses with a drop of water, it bruises with more or less facility, assuming a milky look, and a part of it composed of globular fragments mixes with the fluid. The entire mass appears granular in the microscope, and of a light sienna colour. The borders are irregular, jagged, and broken, and many projecting fragments, about to separate themselves, are apparently attached to it by softer and more elastic matter, resembling in some measure a connecting tissue. This is not unlike what we have seen uniting the particles of fibrinous substance, which joins the fibres of muscle previously boiled. At an earlier stage, this softer material of union is less remarkable, because of the greater homogeneity of the morbid matter. When, however, it approaches towards softening, the connecting tissue grows more elastic and apparent, but to disappear ultimately in leaving innumerable globular bodies.

These are the gum-like globules described by us in a preceding essay, and they resemble broken portions of a friable mass. They have some features in common with broken morsels of fibrine well cooked. The chemical reactions also are almost alike. They vary in volume from minute particles to morsels as large as, and larger than the globules of pus. Frequently two, three, four, or more of them, closely united, mix with the rest. They are all transparent; some of them have a uniform or smooth surface, others have a rougher broken appearance, and a good many present black points not unlike those of the globules of pus.

The normal fibrine of the healthy body, and of coagulable lymph, bears in it a vital property of organisation, into fibre, tissue, and vessel. But the globular bodies of tubercle go on progressively completing themselves, even at the cost of neighbouring organic textures, which ultimately soften and dissolve.

The gradual transition of tubercular secretion into concreted tubercle, and finally into yellow matter, and the globular mass of softening, is highly interesting to the speculative inquirer into disease. It seems that tubercle when formed by secretion, must pass through a progressive alteration of aspect; and this is perhaps effected by a gradual change of its integral composition. This change follows in all probability in obedience to laws similar to those of catalysis familiar to the chemist.

However, it is scarcely possible to prove positively the transition of tubercular secretion into yellow matter, and mature tubercle; but a strong case of reason can be made out in support of it. We see tubercle in every variety of condition from newly eliminated secretion, to grey, white, yellow, and soft matter; and it is not too much to believe that it may go through these forms in gradual progression, to what is clearly its terminal state. It is, beyond a doubt, yellow tubercle is not formed at once, but requires, an interval of some time for entire development. This period is of variable duration, but probably always longer, the more purely has been its origin in secretion. The alteration of appearance must be considerable and manifold in the maturation of tubercle; and as the simple way of estimating them, we should regard the many varieties of tubercular matter, as representing faithfully the successive steps of this interesting change.

To seek a satisfactory explanation of the transition of tubercular secretion into the yellow globular mass, would be a vain endeavour; but we may make curious observations enough, which render it familiar and comprehensible. If we steep a grey granulation of comparatively recent formation in distilled water, its transparency is lost to appearance, and, becoming blanched, it resembles outwardly one of older date, or greyish-white tubercle. The ultimate composition, however, is not altered in equal measure. Again, a portion of firm tubercle kept during hot weather in water occasionally renewed, softens and approaches nearer to the quality of yellow matter. It is

compressed more readily by the object glasses, and separates into globular fragments, like those of softening matters in cavities. They are not, however, wholly identical, being analagous, but not perfect in the entire of their characters. Modifications such as these, of which tubercle is susceptible in so short an interval by management of its physical relations, leave us to comprehend those others of tubercular transition which are only perfected after some time in a laboratory, such as the diseased organ of the living body. It is, however, impossible to accomplish the several steps of tubercular transition by any composition of physical means, in so far as our experience goes.

Elsewhere we have sought to prove that tubercle forms by secretion, and also not seldom by direct conversion of blood permanently coagulated in the vessel. Secreted tubercle is, however, its general form, while the transition from coagulation happens, when tuberculization goes on in common with accidental disease. We have already enumerated some of the powers which, in our opinion, are engaged in the function of secretion, and return again to this interesting inquiry. There are four powers at work more especially in the secretion of tubercle, which eliminate it from the blood, and these are the tuberculizing affinities of the capillary, its power of imbibition, the force impelling onwards the fluids in circulation, and, fourthly, the formation of tubercle without the vessel.

The power that elaborates tubercle from the blood belongs to the capillary, and we conceive it to be nothing short of a morbid alteration of those affinities, by which vitality forms the varied secretions of health, but in particular those of nutrition. The chief elements of animal matter are fibrine, gelatine, and albumen, how various soever may be the organic forms they assume. Coagulated lymph is one of the simpler products of morbid changes, and preserves enough of organizable properties to become tissue, fibre, and vessel. Tubercle is a farther alteration of disease, and although of analogous parentage, is not thus organizable; and pus is still more remote. Lymph is produced by the first of the series of deviations of the vital affinities from the normal order of health, which eliminate fibrine for secretion from the blood. Fibrine is required almost everywhere in nutrition; and likewise, the exudation of lymph is nearly as general, although accidental in its site. The

affinities of tubercular composition are another variety of morbid changes like those of fibrine, but so very complete and remote, and preserving so little of the usual organizing properties as to be in no manner fit to prepare an organic matter of equal character. However a very slight tendency still remains with it for a cellular arrangement, seen in the quantity of adhesive matter which binds intimately together the mass of globular concretions in mature tubercle. Were we to give a scale of degrees of morbid alteration in these cases relatively to one another and to healthful function, we would regard the forces forming coagulable lymph in the proportion of two, tubercle three, and pus four; these figures would represent the deviations from health of the vital affinities which eliminate fibrine from the circulation for the various purposes of the economy. Measuring, therefore, the series of changes in the case of three such common morbid alterations of the vitality, we compare them to the process of healthful nutrition estimated as one.

We look upon the capillary as a little laboratory of secretion, whether for nutrition or excretion, or the lubrification of tissues and membranes. But it is the laboratory of vital affinity, and notwithstanding we cannot appreciate the peculiarities of the vitality productive of substances of such various aspects, still its power is evident in what it produces. This power of collecting the elements of secretion, conveniently placed in the capillary, is the first cause of this important function. It eliminates them from a mass where many influences are at work, and, forming them into the material proper to the locality, attracts the secretion in embryo to the vascular wall, a position both favourable and necessary for its passage outwards. If it were not so, even if we could suppose the secretions already in the blood, they could neither be separated pure from the vessels, nor on their proper sites, unless a suitable mechanism of the capillaries provided for its evacuation, as various as the material to be voided. But no provisions either of a mechanical or purely physical nature can possibly answer these purposes. They are accomplished by several means, and the vital affinities form the hinge of the whole.

The power of imbibition of the capillaries is most useful in secretion. To perform this function a vessel is requisite, which can assist exudation outward of blood, and balance the impulse

of the circulation. The globular constitution of the blood, making it a mass of solid but elastic particles, that cannot escape except through an opening of proportionate size, and, on the other hand, the uniform and compact membrane of the capillary devoid of perceptible pores, answer those purposes admirably. The preservation of the blood within the vessel, securing thus far its proper circulation, brings the material of secretion and nutrition to every point where the vital affinities, according to local peculiarity, perform the part of a laboratory. The capillary affinities attracting the matter of secretion on to the vascular wall, bring it into most suitable circumstances to pass outwards. It is at this period that a membrane imbibing as readily as the capillary, is of indispensible value, sufficing to imbibe moisture, to preserve every fibre and tissue soft, humid, and supple; it must now, of necessity, take up the secretion special to the locality and already attached to the capillary. An imbibing membrane, even without visible pores, assures a passage to secretions in the state of fluid, and enables the power propelling the circulating mass to aid efficiently in their evacuation from the vascular apparatus. Wherever passage is given to fluid by imbibition simply, there also it may be expressed, and the escape of it may be increased by any force we apply short of rupturing. When the vital preparation is complete for secretion, and the embryo liquor besmears the interior of the capillary, and this has imbibed it through, then secretion may go on easily. An outlet once formed, it is afterwards voided with facility outwards by the pressure of the column of circulating fluids, and it is nothing impossible that the capillaries accommodate themselves more, by degrees, to the passage and evacuation of a morbid production, its elimination becoming more like healthy secretion. This is seen in the dryness of a newly inflamed membrane, which, even when quite bloodshot, requires some interval to prepare for morbid secretion, that at length flows freely and in plenty. Besides, old constitutional evacuations proceed at length so calmly as to resemble very much the secretions of healthy organs. The mechanism of secretion becomes so perfect in the part as to afford equal facility for morbid deposition, as that of the liver does for the evacuation of its bile.

[No doubt the propelling force of the circulation is an important aid to secretion, and so likewise is the distended state

of the capillary. By these means its tissue becomes, as it were, stretched and more open, so as to permit the egress of its contents.]

The earliest form of tubercle, in an uncombined state, met with in the corpse is the grey granulation when newly deposited. This body is secreted as a somewhat clear fluid, which, increasing gradually in consistence, concretes into a tough, and lastly, friable mass. The most recent examples of it we have seen were minute greyish bodies, like grains of millet seed, scattered throughout the spleen of tuberculous infants. They were about the consistence of gluten of grain. If we enquire farther what may have been their appearance at an earlier period, a fair means of settling the question will, perhaps, be to refer to the vesicles of scrofulous ophthalmia, which are not seldom followed by condylomatous growths, resembling much punctiform tubercle.

Originally, therefore, they are of a glutinous fluid nature, more or less consistent, which only becomes firmly solid in process of time. Probably also the same quality of thing is secreted, when the deposition of tubercle befals larger portions of the frame, and when infiltration takes place into the substance of any part, or from a secreting surface. Once having attained the exterior of the capillaries by means of other conspiring powers of secretion, it loses partially the fluidity, which characterized it as liquor of secretion, whilst passing through the vital laboratory of the vessels.

[And the very circumstance of the tubercular matter becoming concreted, leaves the outer surface of the vessel more free for the egress of fresh matter, which would not be the case, were the liquor of secretion to be always smeared over the capillary; and, moreover, this concretion prevents the ready absorption of the matter into the circulation. The absorption of tubercle, however, without a previous chemical change, is not easily conceivable, and it is probable, that if this ever does occur, it is only in its recent state.]

Dublin Journal of Medical Science, March 1842, *p.* 1—40.

102.—ON THE USES OF THE LIVER.

By John Bostock, M.D., F.R.S., &c.

[In Article 111 of our last Retrospect (No. IV.), will be found a very interesting explanation of the uses of the portal circulation, by Dr. R. Willis, in which he arrives at the ingenious conclusion that, "it is a contrivance, a most admirable contrivance, to economise arterial blood." Dr. Bostock says that the remarks of Dr. Willis were read by him with much interest: especially, as they coincided with some of his own views on the subject. He says:]

When we take a general view of the animal economy, and especially, when we enquire into the relation which its different functions bear to each other, although we must consider the whole of them as bearing their part in maintaining the system in its perfect state, yet there are some which would appear to be more immediately essential to its existence; among these we regard that series of actions, by which the materials of which the body is composed are received into the stomach, and, after experiencing the necessary change in the appropriate organs, are finally deposited in the blood, constituting the respective functions of digestion, chylification, and absorption. The matter thus deposited in the blood-vessels is destined to supply the demands of the system in the processes of growth and nutrition, as well as for the reparation that may be required, either from the effect of natural decay, or from accidental injury. Now, in order that there may be, at all times, sufficient materials to supply every contingency, there must, in most cases, be a superfluity, and it therefore becomes necessary that there should be some regular mode of discharging this superfluous matter. The elements which enter into the composition of one aliment, and which, after due elaboration, are deposited in the blood, may be considered as essentially consisting of carbon, azote, hydrogen, and oxygen; and with respect to at least the three first of these elements, a distinct organ is provided for the removal of any superfluous quantity of them which may exist in the blood, after supplying all the wants of the system. The processes by which this removal is effected, and which may be styled *depurative*, are performed for the three elements respectively by the lungs, the kidneys, and the liver.

With respect to the lungs, I may remark that this organ

affords a beautiful illustration of that admirable system of adjustment and contrivance, which forms so conspicuous a feature in the animal economy. We conceive the primary and specific object of the respiration to be the evolution of caloric, an effect which is produced by the union of a portion of the oxygen of the inspired air with a portion of the carbon of the venous blood. Now, this combination of oxygen and carbon, by which heat is liberated, constitutes one of the depurative processes; and it is the one which is the most essential to the well-being of the system; for the excess of carbon. which affords the fuel for the "slow combustion" in the lungs, were it to remain in the blood, would render it totally unfit for performing its appropriate functions, or even for the temporary continuance of life.

The second of the depurative processes, that by which the superfluous azote is removed from the blood, is effected by the kidney. The removal of this element proceeds upon a somewhat different principle from that of the carbon. We are not aware of any immediate injury or deleterious effect which the excess of azote produces upon the system, and, therefore, it was not necessary that the whole of the blood should pass through this purifying organ; hence a comparatively small portion only of the blood is carried to the kidney, which secretes or separates from it the highly azotized substance, the urea. With respect to the circumstances which promote the action of the kidney, we may conjecture, that it will be excited by the nature of the fluid that is conveyed to it, and that, when the blood has any of its constituents in undue proportion, it may possess a stimulating quality, adapted to increase the secretion of the urea. And besides the urea, the kidney appears to be one of the great outlets, by which the system is freed from any superabundant water which it may contain, and is thus peculiarly well adapted to carry off all the urea which is generated, as well as any excess of saline matter which may exist in the blood. The kidney may, indeed, be regarded as a kind of secondary cloaca; the intestinal canal being the channel for carrying off the residual part of the food, after the separation of its nutritive matter, while the kidney discharges the heterogeneous substances which have been received by the blood-vessels, but which, being no longer required, or having performed their appropriate functions, are to be regarded as residual.

And with respect to the discharge of water from the system, we have here another example of that plan of compensation, on which we have already had occasion to remark. A quantity of aqueous vapour is exhaled from the lungs, which is increased or diminished according to the temperature of the atmosphere, and various other circumstances, external and internal, but when it is not carried off by the lungs in due quantity, the superfluous fluid is discharged by the kidney.

The third of the depurative processes, that by which the superfluous hydrogen is removed from the blood, is effected by the liver, but by a different arrangement from that employed either in the lungs or the kidney. In the case of the liver, it is only a comparatively small portion of the blood which is conveyed to the organ for the purpose of purification, thus differing from the analogous operation in the lungs, while it also differs from that in the kidney, by receiving venous, instead of arterial blood. Although it may be difficult to assign any reason for this arrangement, which can be considered as more than conjectural, yet we may form some speculations on this subject, which are, I conceive, at least plausible. The blood, after passing through the pulmonic circulation, is sent into the great systemic arteries, purified from its superfluous carbon. The superfluous azote, and the various saline substances are next removed by the kidney, after which the whole of the blood is returned from all parts of the body and conveyed to the great venous trunks. A portion of this blood is carried to the liver, which organ, like the lungs, exercises a double function; the blood is freed from a quantity of superfluous matter, while, by this depurative process, a substance is generated, into the composition of which hydrogen enters in considerable proportion, and which is essential to the proper action of the digestive organs. I agree with Dr. Willis in the opinion, that the selection of any particular portion of the venous blood depends entirely upon the anatomical relation of the parts, and not upon any chemical difference in the nature and quantity of its constituents. And we may here remark upon the compensating power of the liver. When, from any cause, a less quantity of carbon is required for the evolution of heat in the lungs, than is consistent with the healthy constitution of the blood, the liver would appear to be the organ by which this irregularity is rectified, by an increased secretion of bile. We have

thus an additional provision made in the arrangements of the system to prevent an undue accumulation of carbon, an element which, when it exists in excess, appears to exert a positively deleterious influence. But with respect to azote and hydrogen, the case is different. Although we must conceive that an excess of these elements is more or less inconsistent with the maintenance of the healthy state of the system, yet it is not so immediately injurious, and we, consequently, have no compensating organs, by which such excess may be removed, in defect of the due operation of the kidney and the liver.

With respect to the oxygen, there appears to be no depurative process by which it is removed from the blood. Probably the continued expenditure of this element, in almost every operation of the system, when either the muscles or the nerves are called into action, may prevent its undue accumulation, and even should we admit of the existence of a hyperoxygenized state of the blood, we are not aware that any immediate evil would result from it. We may also conjecture, that when the blood contains an excess of oxygen, this redundant quantity becomes united to a portion of carbon, so as to form an oxide, which we may conceive to be less deleterious than the carbon in its uncombined state.

London and Edinburgh Monthly Journal of Medical Science, May 1842, *p.* 403.

102.—ON THE NON-VASCULAR ANIMAL TISSUES.

By Joseph Toynbee, Esq., M.R.C.S., Late Assistant to the Conservators of the College Museum.

Mr. Toynbee, in this paper, which is published in the Philosophical Transactions for 1841, starts with the observation that it is now generally acknowledged, that the process of nutrition in most animal tissues consists in changes undergone by the nutrient liquor sanguinis, which has exuded into them through the coats of the capillaries ramifying throughout them. The vessels themselves vary in number in different structures: in muscle, the capillaries are very numerous, and the spaces between them very small; whilst in tendon and ligament, on the other hand, the latter are comparatively large; but in all structures, whatever may be the degree of their vascularity, the tissue the furthest removed from the vessel is nourished equally well with that which is in immediate contact with it.

In all vascular structures, therefore, there is of necessity a considerable extent of tissue which is nourished without being in contact with blood-vessels, and the knowledge of this fact forms a necessary introduction to the study of the process of nutrition in those organs, into which, whilst in a healthy state, anatomists have never succeeded in tracing blood-vessels. The organized tissues, constituting such non-vascular organs, may be divided into three classes :

The first, comprehending articular cartilage, and the cartilage of the different classes of fibro-cartilage ;

The second, the cornea, the crystalline lens, and the vitreous humour ;

The third, the epidermoid appendages, viz. the epithelium, the epidermis, nails and claws, hoofs, hair and bristles, feathers, horn and teeth.

Mr. Toynbee's endeavour is to prove that no vessel ever enters these tissues when they are perfectly developed, and in a healthy state, and to demonstrate the manner in which they are nourished.

Mr. Toynbee adopts the following line of argument.

In the first place, no anatomist has ever been able to trace vessels into these tissues in the adult healthy state ; Secondly, he thinks that the due action of the organs into the composition of which these tissues enter is incompatible with vascularity ; in other words, that the presence of blood-vessels within them is a sign of disease.

The first class, for instance, of the non-vascular tissues, comprising cartilage and fibro-cartilage, is subject, from its situation in the joints, &c., to repeated concussions, and to constant compression and attrition, which in these unyielding tissues would necessarily be destructive of the integrity of blood-vessels.

Those of the second class are required to be perfectly transparent for the due transition of the rays of light, which would be impossible if the circulation of a coloured fluid were carried on throughout their substance.

The tissues of the third class are unceasingly exposed to friction, laceration, and incision ; and hence, of course, it is necessary that they should not be traversed by vessels.

Mr. Toynbee's injections have proved to him that the vessels which previous anatomists had traced no further than their cir-

cumference (supposing them to be continued into these tissues, either as serous vessels, or as red blood-vessels too minute for injection,) actually terminate in veins, without the limits of these tissues. The terminations of these vessels in the immediate vicinity of the non-vascular tissues, present certain convolutions, dilatations, plexuses and other peculiarities which differ in various parts, but in all instances enable a large quantity of blood to circulate slowly in the neighbourhood of these tissues, from which it may be inferred that they are subservient to the nutrition of the latter; and their existence certainly constitutes another argument against the presence of vessels within them.

All these non-vascular tissues contain corpuscles or cells, of which some of them are almost entirely made up; while in others, as the cornea, a few only are present.

Mr. Toynbee refers to the researches of Schwann, &c., on the cells of animal tissues. These cells are modifications of two principal forms, the one being either round or oval, the other compressed in the form of a scale; and their existence in one of these two forms has lately been detected in most organs of the body.

In a circular form they appear to be the principal components of bone, cartilage, muscular and nervous fibre, and of the parenchyma of glands; in the form of a flattened cell or scale, they constitute the epidermis and its appendages, the epitheliuin of mucous and serous membranes, and of the inner tunic of the vascular system.

Mr. Toynbee agrees with M. Schwann that these cells have vital actions, and, he thinks, not only during development, but afterwards. He ascribes to them the function of circulating, and of perhaps changing the nature of, the nutrient fluid which is brought to the circumference of the solid non-vascular tissues, and he believes them in some measure to compensate for the absence of the internal vascularity possessed by other structures. The only difference, in fact, which appears to him to exist between the mode of nutrition in the vascular and non-vascular animal tissues is, that *the former* derive their nutrient fluid from the blood which circulates through the capillaries contained in their substance; and that *the latter* are penetrated by the nutrient fluid which exudes from the large vessels by which they are surrounded; and that its distribution through them is

assisted by the vital properties of the corpuscles which they contain; in *both classes*, the particles of which the tissues are composed attract from this fluid the elements which nourish them.

Of the Cornea.—Mr. Toynbee first notices, to dispute, the statement of Müller, that the cornea has no corpuscles. Some of them are rounded, others are oval, and have fine branches radiating from them, similar to the osseous and pigment corpuscles. These cells are surrounded by the bright fibres of which Müller has spoken; these fibres, which compose the larger portion of the cornea, are laxly connected together, so as to have some analogy with cellular tissue; the substance of the cornea being of a loose texture, and easily pervaded by fluids. Mr. T. thinks that this easy penetration prevents the necessity for as many corpuscles in this as in the denser tissues.

Mr. Toynbee next describes the vessels which nourish the cornea, previously quoting the opinions of Boyer, Cruveilhier, Jacob, Lawrence, Romer, Tyrrell, and Wardrop. Mr. Toynbee then goes on to state:—

In an eye which is injected with tolerable success, the white sclerotic membrane will be observed to be traversed by two sets of vessels. One of these consists of small and numerous branches, which have a straight direction towards the circumference of the cornea. These are the ultimate branches of the sclerotic arteries which course towards the cornea. The other set of vessels is composed of the large and tortuous trunks which are seen with ease by the naked eye; these are the sclerotic veins, which take a retrograde course to the arteries just alluded to, and become gradually larger as they get more remote from the cornea; these sclerotic veins return the blood devoted to the nutrition of the cornea.

Upon examining *the arteries* with a magnifying glass, they will be found, at the circumference of the cornea, to terminate in two sets of vessels; of these, one is superficial, and consists of delicate branches which pass inwards over the surface of the cornea, between it and its mucous covering, and are analogous to the vessels of joints which pass between the articular cartilage and the synovial membrane. The other set of vessels in which the sclerotic arteries terminate, are much larger than those just noticed, and are more like the continuation of their trunks; these, at the circumference of the cornea, pass into

the substance of the sclerotic, where they come in contact with the attached margin of the cornea.

The *superficial or conjunctival* arteries, upon arising from the sclerotic, take a course parallel with the circumference of the cornea. and are sometimes so long as to receive the name of its circular vessels : from these, branches are given off which pass in a direction towards the centre of the cornea. These, after division and sub-division, form a minute plexus on the border of the latter, and they terminate on its surface from one-eighth to half of a line from its circumference, by becoming continuous with the venous system, in several modes.

The small *veins* which arise from the arteries take an opposite course to the latter, and upon reaching the margin of the sclerotic, they empty themselves into the large tortuous veins, which have been noticed above, just as the latter are emerging from the substance of the sclerotic, where it is attached to the cornea.

The *deep or sclerotic arteries* of the cornea are those from which this structure derives its chief nutrition. They are large enough to be considered the continuation of the trunks of the sclerotic arteries; they pass without much diminution of their size towards the point where the sclerotic membrane is continuous with the cornea. At the margin of the latter they suddenly stop and turn back, forming loops; sometimes with, and at other times without dilatations, they become continuous with the veins. These veins emerge from the substance of the sclerotic, close to the margin of the cornea, at which point they receive the conjunctival veins: and they take a backward course, and form those tortuous veins which have already been noticed.

But, in disease, the marginal vessels of the cornea are prolonged through its substance, while those which, when healthy, extend over the surface of the cornea from the one-eighth to half of a line, in disease form a band of considerable extent.

The Crystalline Lens.—M. Schwann thinks, that the lens is at first composed of cells, which are afterwards converted into fibres. Mr. Toynbee has not only found cells interspersed among its fibres, but has frequently seen the fibres themselves composing the external part of the lens, made up of these cells; and in other instances they occupy the margin of the fibres only.

Speaking of the *blood-vessels* of the lens, Mr. Toynbee says—"I have not only been unable to trace vessels into the anterior capsule, but I hope to prove that in the healthy state no vessels do enter it. The posterior capsule of the lens is, however, injected with facility, and contains large and numerous ramifications of blood-vessels; I ascribe to them the function of supplying the crystalline lens with a nutrient fluid. These vessels arise from the arteria centralis retinæ; the latter, having traversed the centre of the vitreous humour, expands upon the capsule, and forms the ramifications just noticed. Now, in some injections which I have made of the eyes of a human fœtus, of the sixth or seventh month, these vessels were not confined to the posterior surface of the capsule; they pass round its border and extend upon its anterior face to the extent of one quarter of a line. I have not been able to make a perfect injection of the vessels of the capsule of the lens in ages antecedent to the fifth or sixth month of the fœtal life, and therefore am unable to say whether, in the very early periods of development, the anterior capsule, like the membrana pupillaris, is entirely traversed by vessels; the crystalline lens would under such circumstances, be completely surrounded by blood-vessels.

The branches of the arteria centralis retinæ in the early periods of life, as noticed above, extend upon the anterior surface of the capsule. Immediately they reach the latter they become straight, run parallel with each other, and are directed towards the centre of the anterior surface for the distance of a quarter of a line, when they stop in their course, and form looped dilatations, which give origin to small veins. It is most probable that these vessels recede at subsequent periods of development, so as to leave the whole of the anterior surface of the capsule capable of being permeated by the rays of light. These vessels, in a diseased state, are sometimes prolonged into the whole of the anterior capsule, (or to speak with more propriety, the anterior half of the capsule,) where, in morbid specimens, they have been injected by Schroeder Van der Kolk. The capsule of the lens is thus pervaded by large and numerous ramifications of blood-vessels, which I believe pour out upon its inner or lenticular surface a nutrient fluid; this *fluid will immediately come in contact with* the mass of delicate cells described by Schwann as situated between the lens and the

capsule." Mr. Toynbee supposes that the nutrition of the lens is effected by these cells receiving the elements of the blood, and conducting them to the lens, through which they are diffused.

Vitreous Body or Humour.—The membrane of the vitreous humour is very delicate, and interspersed with corpuscles.

The arteria centralis retinæ passes through the vitreous body but Mr. Dalrymple alone has succeeded in injecting from it the periphery of the hyaloid membrane.

Mr. Toynbee is inclined to think that the ciliary processes have the function of nourishing the vitreous body. "I have succeeded," he says, "in making very minute injections of the vessels of the ciliary processes, the disposition of which is remarkably beautiful; they have been most accurately delineated and described by Zinn. I have particularly to allude to the immense quantity of blood that their large size allows to be continually circulating through them, and to their plexiform character, which is productive of a slow circulation of the fluid they carry. At the free border of each ciliary process is a large single vessel, which is received into the base of the sulcus of the vitreous humour and is in immediate contact with it. When it is remembered that the investing membrane of the vitreous humour is very delicate, and that it is made up of cells or corpuscles, and that it has in immediate contact with its free surface these large and numerous vessels, they may perhaps with great reason be considered as the organs of nutrition of the vitreous humour, by eliminating a nutrient fluid which penetrates into, and is diffused through, the substance of the latter.

Medico-Chirurgical Review, April 1842, *pp.* 426-438.

[We would strongly recommend those who have not read this interesting account of Mr. Toynbee's researches, to do so immediately. They will be found much more at length in the Medico-Chirurgical Review for April.]

We find that our space will not allow us to enter further on several interesting articles on Anatomy and Pathology; and we must therefore be content with referring the reader to such as are most valuable. We have published almost every article of value in the different practical branches of Medicine, Surgery, and Midwifery, and we feel at liberty

therefore to omit many articles on Anatomy, &c., in order that we may find space for more interesting and practical information. The papers which we intended publishing are the following, and to which, if convenient, we would advise the reader to refer if he wish for further information on the subject.

104.—On the Nervous Ganglia of the Uterus. By Robert Lee, Esq. F.R.S. *Medical Gazette*, Jan. 21, 1842.

105.—On the Prognosis regarding Affections of the Portio Dura. By Dr. Graves. *Dublin Journal of Med. Science*, Jan. 1842.

106.—On Albuminaria, or Bright's Disease of the Kidney. By Dr. Graves, Dublin. *Ibid.*

107.—On the Membrana Decidua. By Dr. Sharpey. *London and Edin. Monthly Journal of Med. Science*, Feb. 1842.

108.—On Animal Heat. By Francis T. Richardson, M.D., Edinburgh. *Ibid.*

109.—On the Corpuscles of the Blood. By Martin Barry, M.D., F.R.S.L. & E. *Ibid*, Jan. 1842.

110.—On the Transmissibility of Cancer. *Gazette Medicale*, and *American Journal of Medical Science*, Oct. 1841.

111.—On the Sounds of the Heart. By M. Cruveilheir. *Medico-Chirurgical Review*, Jan. 1842.

112.—On the Position of Images in the Eye. By H. H. Broughton, Esq., Dobcross. *Provincial Med. and Surg. Journal*, Dec. 25, 1841.

113.—On the Extreme Ramifications of the Minute Arteries and Veins in the Coats of the Intestines. By Dr. Gaddi, of Modena. *Dublin Medical Press*, Nov. 10, 1841.

114.—On the Structure and Use of the Malpighian Bodies of the Kidney, with Observations on the Circulation through that Gland. By W. Bowman, Esq., F.R.S., &c. *Lancet*, April 16, 1842.

115.—On the Operation for Spinal Curvature. By G, P. Childs, Esq. *Medical Gazette*, Jan. 14, 1842.

116.—Observations on the Treatment of Hare-Lip. By John Austin, Esq., M.D., F.R.S., &c.

117.—Additional Facts Regarding the Structure of the Liver. By M. Ernest Lombron. *Edinburgh Medical and Surgical Journal*, Jan. 1842.

118.—Successful Ligature of the Primitive Carotid Artery for an Erectile Tumour of the Orbit, and Results of Experiments made upon Animals with a view to shew the Influence Exercised upon them by Ligature of this Vessel. By M. Jobert. *American Journal of Medical Science*, Oct. 1841.

119.—Fatal Stab of the Brain. By Dr. Keyl, Regimental Surgeon. *British and Foreign Medical Review*, Jan. 1842.

RETROSPECT.

No part of practical medicine has been more discussed than have Percussion and Auscultation: and no branch of our studies has been attended with more important results than the almost certain knowledge which we can now possess, in any individual case, of disease of the chest. At the same time, we must confess, that in our own profession, there are more practitioners ignorant of the most modern views on these subjects, than are the members of most other professions of the recent advances in their particular avocations. There may seem to be an apparent complexity in making ourselves acquainted with the multiplicity of sounds in examining a healthy or diseased chest, but all these different kinds of sound may be resolved into very few, and after that is done, a good deal will depend upon the assiduity of the practitioner in perfecting himself in the detail. The French practitioners seem to take a delight in drawing as many fine distinctions as possible, in order to display that accuracy of diagnosis which they certainly possess in a very superior degree, but which is too frequently practised to the exclusion of the still more important duty of treatment. We would say of the French and British practitioners, that the former take most delight in finding out the nature of an affection, and the latter in curing it. A patient may go to Paris to have his disease accurately diagnosed, but he must return to London to have it cured. These observations are chiefly drawn from us after the perusal of the very practical Lectures by Dr. Watson; in which, he has done a good deal to simplify the study of the diseases of the heart and lungs. Some of the most important of his observations on this subject will be found at the commencement of this volume. (*Art.* 1.)*

We are glad to perceive greater attention paid by manufac-

* The different figures introduced, refer to the articles in this volume, where the subjects spoken of are more particularly dwelt upon.

turing chemists, to the preparation of different extracts in common use; but unless the practitioner has confidence in the integrity of his druggist, and can depend upon his judgment and skill in the selection of his plants, and in the preparing of them for use, we are convinced that the sale of these, as well as of all the other drugs which can be, and which are so extensively adulterated, will be considerably limited. For example, how different is the effect pruduced by some extracts of dandelion to that of others; and yet, when properly prepared, we are persuaded that it is a valuable remedy in many hepatic affections. We have given the opinion of some celebrated practitioners as to its uses; and we should be disposed to think, with Dr. Wilson Philip, that when the extract of dandelion is properly prepared, (and if not so, the root itself taken in infusion,) it will be found a valuable remedy in those affections of the liver in which we are too apt to give repeated doses of mercury. Perhaps a combination of taraxacum with the nitro-muriatic mixture, will be found one of the best substitutes for mercury which we possess, and in those constitutions where mercury is inadmissible, this combination will be found invaluable. Dr. Scott was chiefly instrumental in bringing the nitro-muriatic mixture before the public, somewhat above twenty years ago; but, although recommended by Dr. James Johnson and other eminent physicians, it has never been sufficiently tried in cases of disordered liver and obstinate constipation. The way Dr. Mettauer makes this mixture, is, with equal parts of nitric and muriatic acids and water, and of this he gives from six to twelve drops, properly diluted with sugared water, three times a day, varying the doses, so as to give the largest at noon and at night: of course the medicine must be given through a small canula of reed to prevent its action upon the teeth. At the same time, from thirty to forty drops, diluted in two or three times as much simple water, may be applied with a sponge over the region of the liver and epigastrium, and to the insides of the arms and thighs, having previously washed away from the skin with soap and water its unctuous secretion, to enable the acid mixture more readily to penetrate. The effect of this remedy will often be manifested in three or four days, when the bowels, previously constipated, will be found to act regularly, and the secretions of the liver to assume a more healthy aspect.

There are many cases of puerperal mania which are owing to an obstinate condition of the bowels with a collection of morbid secretions in them, which it is sometimes exceedingly difficult to overcome. In these cases, the nitro-muriatic mixture will occasionally be found of great use, and when used properly diluted and with caution, is a perfectly safe remedy; but it will be found chiefly valuable in these cases as an external application, in the way just recommended, viz., by sponging different parts of the body with the lotion. Dr. Mettauer states, that this medicine is not only useful in hepatic disorders and obstinate constipation, but also in uterine affections of a sub-inflammatory nature, in some of the forms of external scrofula, and in nearly every variety of psuedo-syphilis.

The nitro-muriatic mixture seems especially adapted to those cases "which are based in chronic inflammation or engorgements of the capillary and parenchymatous structures of an indolent nature, either as the primary pathological condition of these structures, or the consequence of inflammation." And in this view it resembles in a great measure the action of mercury. In cases which are decidedly inflammatory, the use of this mixture is not to be recommended; as a general rule, it must never be used in *acute* diseases, on account of its power of exalting the action of the economy, and only in *chronic* affections with very slight febrile disturbance. Some have attributed the effects of this medicine to the presence of chlorine, as Dr. Mattauer found very similar effects from a solution of chlorine in water. If, therefore, this remedy be tried in combination with the taraxacum prepared by Mr. Houlton, we shall have an agent of remarkable efficacy in many chronic affections of the abdominal organs. "M. Polex has extracted from the milky juice of the Leontodon Taraxacum, a crystallizable substance, which he has designated Taraxacine," but we are not aware of any advantage to be derived from its use, more than from the use of the common preparation. (2.)

It seems now generally acknowledged, that the phenomena attending a fit of asthma are to be attributed to spasm—to a spasmodic action, especially of the different fibres which encircle the air-tubes, and which may be distinctly seen when hypertrophied, encircling the larger bronchi, and which have been traced by Reissessen in tubes of a very small diameter. Laennec states that he has seen them in tubes less than one line

across. Some anatomists doubt their muscularity; but we must attribute to them the action of muscles, and suppose that they are slender muscles like those which surround the intestines and urinary bladder: this view is corroborated, not only by the experiments to prove the contractility of the lungs and air tubes, as mentioned by Dr. Watson, but also by the circumstance mentioned by Valentin, who found that the rings of the trachea could be made visibly and distinctly to contract, by irritating the par vagum. A fit of asthma, therefore, may be considered a spasmodic affection, during which, it is very difficult to inflate the lungs: hence, the respiratory murmur is generally absent. An ingenious method of expanding the chest, in cases of spasm, is that recommended by Mr. G. Robinson, who orders the patient at the end of every inspiration, or just before he is about to empty his chest, to close his nostrils and mouth so as to prevent the act of expiration; the patient will be instantly compelled to inspire again when the fingers are withdrawn from the mouth and nose, and thus the chest will be effectually expanded. But this practice is not yet sufficiently corroborated by the experience of other practitioners, to allow of full confidence being placed in it; it may, however, be tried with impunity. Narcotics, perhaps, are our best remedies:—opium is generally used in one form or another, but some patients place the greatest reliance on stramonium, provided that it be taken at the very commencement of the attack; but if the spasmodic action be once fairly established, neither stramonium nor any other anti-spasmodic, will have a very powerful effect. Perhaps the Lobelia Inflata will be found a valuable addition to our remedies, not only from its possessing the soothing properties of tobacco, but from exciting that copious expectoration, which is sure, in many cases, to give relief. (4.)

Some years ago, Mr. Bates, of Sudbury, published a pamphlet on the treatment of peritonitis by opium, which made a great impression on the minds of many practitioners. His treatment consisted in keeping the intestine perfectly quiescent during the inflammatory action: but the judiciousness of the opium treatment must frequently be called in question, especially when uncombined with calomel; but in those severe cases where ulceration and perforation are strongly apprehended, the opium treatment is invaluable. To keep the

bowels perfectly quiet for several days together, allows nature an opportunity to agglutinate one portion of the intestines to another, and by this means, to place a barrier to the escape of fæces into the peritoneal cavity. Dr. Stokes, truly remarks, that these cases sink with awful rapidity, and give no time for active treatment: mercury and purgatives would excite the bowels so as to *tear asunder* the newly formed adhesions. In ordinary peritonitis, however, it would not be advisable to pursue this mode of treatment, but to combine it with bleeding and calomel, as recommended by the best authors. Dr. Stokes gives some excellent cases, to show the value of the opium treatment. In one case which recovered, 105 grains of opium were given, besides what was administered in injections; and he alludes to another case which was successful from the same treatment, where peritonitis had supervened upon the bursting of an hepatic abscess into the cavity of the abdomen. (6.)

We have lately had a case of poisoning by arsenic completely prevented by the administration of the hydrated peroxide of iron, as recommended in our former volumes, and we shall rejoice if the same success attends the administration of gold leaf and iron filings, in cases of poisoning by corrosive sublimate. The combination of these two substances has been found, by Dr. Buckler, of Baltimore, to form a galvanic antidote to this poison, which has some ground for confidence, although it will require more evidence to establish our opinion of its complete efficacy. All the compounds of mercury are more or less poisonous, but none more likely to be so than the corrosive sublimate or bichloride, on account of its being introduced so much in the process of tanning and to prevent the decay of timber, as well as in the destruction of insects; thus exposing individuals to the danger of introducing it accidentally into the stomach. Gluten and albumen have hitherto been our chief antidotes, especially albumen, which changes the corrosive sublimate into calomel, and thus renders the patient liable to very severe salivation, which, of itself, is attended with inconvenience, and even danger. Dr. Buckler, amongst other experiments, found, "that by throwing gold dust into a solution of mercury, no action took place till iron-filings were added, when the metallic mercury was at once revived, and was seen to precipitate in a state of amalgam with the gold; at the same time, the oxygen from the corrosive sublimate goes over to the iron, and

forms an oxide of that metal with which the chlorine combines, leaving a hydrochlorate of iron in solution."

The result is a complete decomposition of the poison. Two grains of gold and two of iron are sufficient to decompose five grains of corrosive sublimate. Dr. Buckler gives a minute account of his views and experiments on the action of this antidote in living animals, to which we refer the reader. Mr. Barry thinks, that Dr. Buckler's discovery may prove exceedingly important; but seems to disagree with him on some parts of the question. He is of opinion, that the decomposition is owing "to the thin stratum of fluid immediately enveloping the two contiguous particles of iron and gold:" and, therefore, that "it is essential that these metals should be in a state of division so exceedingly minute, as to remain a short time in *suspension throughout the whole fluid of the stomach.* Every drop of that fluid must be made to contain a multitude of these particles, and yet the entire weight administered be very small." The chief difficulty in this case will be, not in the minute division of the gold, but in that of the iron. It is probable, however, that in this combination of gold and iron, we shall possess, when properly managed, a complete antidote to one of our commonest and strongest poisons. (7.)

In those neuralgic affections, which do not depend upon any organic affection, nor on any constitutional principle situated in the nerves themselves, such as the virus of syphilis, the oil of turpentine will occasionally be found to relieve when the more ordinary methods of treatment fail: this will be found especially the case, when the nerves of the upper and lower extremities are implicated. (10.)

As we are great advocates for the use of nitrate of silver in ophthalmic cases as well as in many other maladies, especially of the stomach, we are glad to perceive it gaining that confidence to which its remedial powers entitle it. In gonorrhœa, we find it of inestimable use, when we use it in the strength recommended by Mr. R. Carmichael, viz., beginning with about a quarter of a grain to the ounce of distilled water, and increasing the proportion gradually to that which can be borne with impunity, seldom exceeding one grain to the ounce. We should prefer this mild injection to those which are stronger, although it is frequently used of the strength of from one to four grains to the ounce. In *chilblains,* a solution of this substance, of ten

to thirty grains to the ounce, and even a drachm to the ounce, if necessary, will often be found superior to the tincture of camphor, and every other remedy in these troublesome affections. In *hæmorrhoids* too, the nitrate of silver, when made into an ointment, will be found a valuable application. It may be made of five to ten grains of the powdered nitrate of silver, to an ounce of lard. This is more particularly useful when the piles are recent. When the hæmorrhoids arise from internal piles, or from congestion of the lining membrane of the anus, a solution of the nitrate in the proportion of ten to thirty grains to the ounce, is preferable to the ointment; not more than a drachm of the solution is to be injected at once. (11.)

The treatment of painters' colic is sometimes very tedious and unsatisfactory, considering the pain which is frequently endured before the affection is overcome. In our 4th Retrospect, Art. 24, it is recommeded to be treated by putting the patient into a warm bath, and giving him glysters while in the bath, making use of the warm water in which he is placed. Dr. C. J. B. Williams, recommends in addition, that the powerful purgatives which we give in these cases, should be combined with belladonna, in order to relieve the excessive pain, and followed up with alum, when the bowels have been freely opened. Half a grain of the extract of belladonna, may be combined with two or four drops of croton oil, and given every third hour, till the effect is produced, and this may be followed up with ten grains of alum, three times a-day. Lead seems to impair the action of the bowels without diminishing their sensibility; and hence, portions of the canal become distended with their contents, without having the power to propel them forwards. The combination, therefore, of a powerful purgative to stimulate the paralysed intestine into action, and belladonna to lower its sensibility, without counteracting the powers of the purgative, is judicious treatment. Dr. Williams mentions a curious fact with regard to belladonna and stramonium, that in animals poisoned by them, the alimentary canal retained its sensibility, while that of the bronchial fibres was quite destroyed. The exhibition of alum is to promote the chronic contraction of the bowels afterwards. It may still be combined with belladonna if necessary. (12.)

We cannot but agree with Dr. Edwards and Mr. Snow in their views respecting the best mode of resuscitating drowned

persons, and children which have been still-born. Dr. Edwards has certainly shown, that asphyxia takes place more rapidly at blood-heat than at inferior temperatures; and he has moreover, shown, "that the quantity of oxygen consumed, and the necessity for respiration, keep a direct ratio with the development of natural heat; and, likewise, that the application of heat to the body increases its power of developing caloric, whilst the abstraction of heat by any cold medium had a contrary effect." By putting a patient into a warm bath during a state of asphyxia, therefore, we cause the system to require more oxygen, and must therefore increase the asphyxia and hasten death, unless respiration is, by the stimulus, re-established. This seems to be very much confirmed by the want of success in the Royal Humane Society, where warmth is generally employed; whereas, some time ago, when less energetic measures were taken to restore the warmth of the surface, persons were frequently restored who had been submerged ten minutes; and in one case even twenty minutes. And in the report of a society at Amsterdam, persons are said to have been restored who had been a quarter of an hour, half an hour, and one a whole hour under water: this is reported by a scientific society; and when we remember that when a person has been only five minutes under water, and may be other ten or fifteen minutes without breathing, we may easily suppose it possible for him to be this length of time under water and still be restored. To promote respiration, therefore, ought to be the great object in resuscitating drowned persons or still-born children, and this ought to be done immediately, by performing artificial respiration; and at the same time, the surface of the body should be kept cool till respiration is re-established, in order that as little as possible of the oxygen which remains in the system may be consumed. (13.) While on the subject of asphyxia, we may refer to the experiments of M. Leroy d'Etoiles, who has suggested galvano-puncture in a manner which at first sight appears formidable. "He introduces an acupuncture needle on each side, between the eighth and ninth ribs, until it reaches the fibres of the diaphragm. He then establishes a galvanic current between the needles, by means of a pile of 25 to 30 pairs of plates an inch in diameter. In his experiments, the diaphragm was instantly made to contract, and an inspiration was taken, then by interrupting the circle and gently pressing on the abdomen,

the diaphragm again ascended, and an expiration was accomplished. Leroy was thus successful in restoring animals which had been under water above five minutes; but upon the whole, the experiments were more interesting than really practical, and could only be brought forward in aid of the more usual means of inducing artificial respiration. (25.) A very extraordinary case of resuscitation is related by M. Trousseau, where the patient had breathed his last a few moments before the operation of tracheotomy was commenced. The heart commenced beating in about a quarter of an hour, and in 57 minutes a deep inspiration was taken. This operation would no doubt be advisable as a last resource in many cases of drowning, as well as in those cases of asphyxia caused by actual disease. When the practitioner is called in haste to such a case, he may adopt the practice of M. Maslhieurat, of drawing aside each lip of the division of the cricoid cartilage with a bent pin, to which a string may be attached, and tied behind the neck so as to keep the wound open. The cricoid cartilage and three rings of the trachea may be divided with a probe-pointed bistoury introduced through a wound previously made in the thyroid membrane: or, the trachea having been laid bare, "it may be punctured at the inferior angle of the wound with a sharp-pointed bistoury, and the rings and cricoid cartilage may be immediately divided by directing the same instrument upwards." (67.)

A good deal has of late been said and written, on the continent, respecting the powers of the waters of Vichy to dissolve urinary calculi; but we suspect the power of this remedy will be inferior to other more powerful alkalies, especially when they are taken largely diluted. The waters of Vichy must be chiefly efficacious from containing the carbonates of soda, lime, and magnesia, but we see no reason why the alkalies artificially prepared, may not be far superior in efficacy. (16.)

In many cases of renal dropsy we shall find elaterium of essential use to us. Medical men are already well aware of the excellent effects of this drug. Bleeding and diuretics are, in their way, of great value in such cases, but the removal of serum from the abdomen and albumen from the urine, must generally be accomplished by the use of elaterium. Dr. Clendinning advises a very judicious mode of administering it, viz. in minute doses at intervals throughout the day, which is

generally followed by copious evacuations, and the increased activity of the bowels is generally accompanied by corresponding activity of the kidneys and copious evacuations of urine. By steadily persevering in this treatment a constant flux is maintained which soon exhausts the serous effusions. It is well always between each day of purgation to have a refreshing night's rest; which is of course the more wholesome when natural, but, if necessary, opium must be resorted to, to procure the necessary rest. The use of opium at night, not only procures the necessary sleep when nature will not allow it, but induces in the patient a much greater tolerance for the drug. (17.)

Dr. James Johnson suggests that the Chinese mode of smoking opium may be made useful "in certain dangerous and painful maladies, where the common mode is found to be inefficient, and attended with great derangement of the digestive organs." The Chinese method induces a profound sleep and insensibility to all mental misery and corporeal pain, which cannot be induced by opium taken into the stomach, and may, therefore, at some period, be used in cases of tetanus, hydrophobia, tic-douloureux, and violent spasms, where the common mode of giving opium by the stomach so frequently fails. Dr. Johnson adds, that "the various preparations of opium might be easily smoked by means of a common pipe, and the powerful effects induced in a very short space of time without the possibility of their being rejected by the stomach, or prevented from acting energetically on the sensorium, and throughout the whole nervous system." (18.)

The researches of M. Bouchardat on Diabetes Mellitus, are probably well known to many British practitioners, but not to all, and we would therefore direct particular attention to his interesting cases, although we cannot quite agree with him in his theory, which is evidently too chemical. He supposes that diabetes originally arises from suppressed perspiration, in other words, "from the acid secretion of the skin being suddenly and completely interrupted," in consequence of which the secretions of the mucous membrane and of the glands of the digestive organs are altered in their chemical composition, and become almost completely acid instead of being alkaline. Now although M. Bouchardat acknowledges the superabundant acids in the digestive organs cannot of themselves act on the fecula so as to change it into sugar, yet he affirms that when-

ever the organic acids exist in considerable quantity, we simultaneously encounter that modification of albumen which acts in converting fecula into sugar, as occurs in the ripening of fruits. In consequence of this theory, M. Bouchardat bends his whole attention to restoring the functions of the skin, and in giving such aliment as contains the least possible quantity of sugar, such as bread made of gluten, &c. (20.)

Bouchardat's opinions, although very plausible, are objected to by men equally eminent. The sugar, no doubt, is formed in the process of digestion, and afterwards becomes conveyed by the blood to the kidneys, where it is eliminated with extraordinary rapidity, so that large quantities are never to be met with in the blood at any one time. Dr. Prout supposes, that diabetes originates in loss of power to assimilate the saccharine principles which we take as food. The formation of sugar in the stomach, is a *healthy* process; but when that sugar cannot be assimilated to the constituent principles of the blood, and through them into the living tissues of the body, it gives rise to diabetes. According to this theory, which we should regard as more correct than Bouchardat's, the great principles of treatment consist in strengthening the digestive and assimilating functions, and in preventing, as far as possible, the formation of sugar in the stomach, by giving only those articles of diet which are as free as possible from saccharine principles; the last object is almost attained by giving what is called gluten bread; and, although this does not exert any positively curative power, it gives time for nature to exert her influence in the system. Majendie proves by experiments, that gluten extracted from wheat flour, is of itself sufficient for the nourishment of dogs, and it is probable, that man might be sustained for a very considerable time on gluten and animal food; but as bread made of gluten is too leathery to be easily masticated, it is necessary to mix a certain quantity of starch with the gluten; one-fifth part of starch in the bread renders it sufficiently easy of mastication. Bravais relates two cases which were completely cured, although the following articles of diet were allowed:—animal nutriment, beef, mutton, fowls, bacon, milk in every form, eggs, cheese, chocolate (without sugar), occasionally spinnage, chicory, sorrel, salades, cabbage, and onions; while the following articles were strictly prohibited:—bread, potatoes, rice, barley, vermicelli, haricots, sugar,

apples, pears, raisins, and all food gummy, saccharine, or feculent. (29.)

The union of acupuncturation with electricity, constituting what is called electro-puncture, has been found of great use in many neuralgic affections. The operation consists in employing one or several needles, and making a communication between them and the prime conductor of an electrical machine, or they may be made to form part of the circuit in the discharge of a Leyden jar. "Majendie affirms that he has treated many cases of incomplete amaurosis with great success by this agency. He employed it, however, in the form of what has been more properly termed galvano-puncture,—by fixing a needle in the frontal nerve, and another in the superior maxillary, and making these communicate respectively with the poles of a galvanic pile of twelve pairs of plates, each six inches square." (25.)

Mustard poultices are becoming more and more useful in practice, and every improvement in the mode of using a common application ought to be known. The *oil* obtained from mustard seed, seems to us likely to prove a more convenient, and at any rate, a much cleaner application, than the common poultice. It may be rubbed on the surface of the skin, when properly diluted, or it may be applied on strips of linen wetted with the solution. The first is advised when the skin is delicate, and the latter where a more powerful effect is required. The great advantage of mustard poultices is, their immediate effect, and the great degree of counter-irritation which they produce. The oil of mustard seed is an application, which when properly secured in a well stoppered bottle, the practitioner can carry in his pocket to those cases which require immediate attention. Dr. Meyer uses twenty-four drops of the oil to an ounce of rectified spirit, or five or six drops to a drachm of oil of almonds; but owing to the great volatility of the oil, it is not only necessary to keep it in well stoppered bottles, but also to mix it for use with the spirit or oil only when required. (25.) While speaking of counter-irritants, we may suggest, that the concentrated tincture of capsicum, as recommended by Dr. Turnbull, (38), will be found an improvement, in those cases where we want to produce powerful rubefacient effects: and in those cases of enlarged tonsils, and even in deeper seated inflammation of the submucous tissues

which so often follows scarlatina, a combination of capsicum with the powdered, or solution of, alum, (as recommended so strongly by M. Velpeau and by ourselves, in Retrospect, No. IV., Art. 8,) will be found an improvement. It may be made by combining three parts of alum with one of the concentrated tincture of capsicum, and after drying them it may be applied in the pow-dered state to the tonsils as before recommended. We cantruly affirm that the treatment of Velpeau is most excellent, and the effects admirable. (38.)

The sedative agency of cold to the spine in the form of ice, has been found, by Mr. Pincott, to be valuable in those cases of infantile convulsions which depend upon an irritable state of the cerebro spinal axis. It may be applied in an ox-gullet along the course of the spine, from the occiput to the sacrum. In the case related by Dr. Todd, in which the ice was applied at the suggestion of Mr. Pincott, the convulsions ceased in ten minutes, although they had existed a considerable time, and had resisted all the usual means of treatment. (27.)

Mr. Tyson, of Ashbourne, has been in the habit of using different preparations of iron, antimony, and mercury, to those which are generally known and prescribed by the profession, and if the elegance and value of these preparations equal the praises which he heaps upon them, we shall be in possession of very excellent modes of preparing these valuable medicines. We cannot enter minutely into the merits of the different preparations, which we leave to abler chemists than ourselves. The liquor Oxysulphatis Ferri, which is in constant use among the practitioners of Derbyshire, seems to be a very excellent and powerful preparation of iron, composed of sulphate of iron, nitric acid, and water. "The oxygen of the nitric acid uniting with the sulphate of iron, forms a per-sulphate; at the same time the iron is converted into red oxide. As a medicine it far surpasses the Tinct. Ferri mur., and it never precipitates the oxide of iron." We strongly recommend the reader again to refer to these excellent formulæ. (28.) The preparations of mercury and antimony used by Mr. Tyson, are also differently made to those in general use by medical men, and equally worthy of consideration by the practitioner and the chemist. James's fever powder is a preparation so frequently required, and at the same time so expensive, that if we could obtain a good substitute it would be very desirable. This, Mr. Tyson states he has accomplished. (5.)

It occasionally happens in cases of poisoning by laudanum, that the most powerful emetics fail to produce vomiting; and notwithstanding the praises heaped upon the use of the stomach pump, we are persuaded that it is too often a useless application, not only from the impossibility of thoroughly cleansing out the stomach by it, but also from the difficulty of using it under some circumstances: Nature, herself, will always accomplish what we want, better than will any such artificial means. In a case of this kind, published by Dr. Buck, the patient had swallowed an ounce of laudanum, and the most powerful emetics were unable to produce any effect: forty grains of pulv. ipecac. with forty grains of sulphate of zinc, then two hundred grains of ipecac. and the same quantity of sulphate of zinc, and ultimately twenty-four grains of tartar emetic, were tried in vain under these circumstances; and as the patient was evidently becoming worse, pulse slower, face livid, and respiration nearly extinct, Dr. Buck injected a pint of vinegar into the stomach, and immediately after it, a large tea-spoon four times heaped full of sal æratus dissolved in half a pint of warm water. "The effect was instantaneous. It broke forth foaming from the mouth in a stream of the full size of that orifice, with such a force as to be projected a yard or more." In about fifteen minutes the operation was repeated, using only half the quantity of vinegar and the same quantity of sal æratus and water.* Green tea was afterwards administered; and next day the patient, although greatly prostrated, was perfectly rational, and gradually recovered. (31.)

Since the publication of our former volumes, several additional notices have been made respecting the use of croton oil in tic douloureux and other nervous affections, which we can corroborate from our own experience in numerous cases which have come under our notice. Dr. Easton, of Glasgow, relates another case where this remedy was remarkable. Its good effects do not seem to depend entirely upon its purgative qualities, but upon some resemblance in its operation to the effects of *colchicum autumnale.* This is corroborated by the fact, that with the use of both colchicum autumnale and croton oil, the urine is increased in quantity, and is evidently denser than

* By sal æratus, we suppose, Dr. Buck means "ærated salt"; i.e., carbonate of soda or potash.

usual, the alvine evacuations being yellow and most offensive. The seat of neuralgia may be supposed to be frequently in the fibrous neurilema, while the good effects of colchicum are perceived more especially, when the fibrous structures of joints are affected, thus shewing that there is some identity of tissue for the good effects of both colchicum and croton oil to show themselves. Dr. Lewins, of Leith, has shown that by the exhibition of colchicum, the specific gravity of urine rises from 1·009 to as high as 1·037, owing to the increase of urea and of urate of ammonia, and that, as during the use of croton oil, the fæces become of a bright yellow colour, "the liver being stimulated apparently through the duodenum, in accordance with the physiological law, that when a membrane is irritated on which an excreting duct opens, the gland from which that duct proceeds is excited to unusual secerning activity." Dr. Easton then asks the question, "Can it be that the croton tiglium is similar in its action to that of the colchicum, and that it does good in tic doloureux by inducing the same effects that colchicum does, when it alleviates the sufferings of the gouty and rheumatic—by eliminating urea and uric acid salts through the urine, when these highly nitrogenous productions of the blood are in excess, and thereby the sources of constitutional irritation, and also by causing a super-secretion of bile?" (33.)

In those cases where very rapid vesication is required, Mr. Edwards accomplishes this by rubbing the part with some inflammable body, and then setting fire to it; æther, spirits of wine, gin, or any other spirituous application may be made use of. It is another way of applying the actual cautery, and ought only to be used when the case is of a serious and very urgent nature: hot water applied to a part will have the same effect. (34.)

A process was invented some time ago by Dr. Whiting, for making bread without yeast, by combining muriatic acid and carbonate of soda so as to produce common salt in the dough. Mr. Dodson improved upon this, by using larger proportions of the muriatic acid and soda, and thus produced an unfermented bread which was exceedingly valuable for weak stomachs, being free from all yeasty particles, and not so liable to create flatulence or turn acid. Mr. Dean has published a method rather different to the others, but on the same principle. (35.)

M. Benoist proposes to substitute a solution of carbonate of soda for liquid albumen, as an antidote in cases of poisoning with salts of copper. He affirms that it forms with the salts of copper an insoluble carbonate, having no deleterious action; and that it is superior to albumen, as this, when used too freely only dissolves the poison. (39.)

The French practitioners who are delighted with novelties, are now placing great reliance on phloridrine, as an adjunct to our preparations of cinchona. "It is extracted from the bark of the roots of the apple tree and the wild cherry tree." M. Lebaudy, editor of the Journal des Connaissances Med. Chir., says, "its efficacy is so decided that we connot hesitate to class it with the most powerful febrifuges." (45.)

It is impossible in this retrospective summary to do more than glance at the different improvements in practice, which have lately occurred in both medicine and surgery: the reader must refer to the articles in question, and also, if necessary, to the original articles in the different works and journals, which have afforded us a supply of so much interesting matter. For example, the papers of Mr. Edwin Lee on lithotomy and lithotrity, occupy a large portion of two numbers of the Edinburgh Med. and Surg. Journal; and it would be impossible therefore to do them justice here. In article 47, however, we have extracted the pith of the whole, to which we beg to refer the reader for a very clever elucidation of the most practical points to be observed in the treatment of stone in the bladder, and for the advantages and disadvantages of lithotomy and lithotrity. Notwithstanding all that has been said in favour of lithotrity, and especially in France, every practical surgeon must see that for a variety of reasons, lithotomy is most suited to a majority of cases of stone, and especially when we include children in the account, in whom lithotrity would be quite inapplicable—but if we exclude children, then it is said that nearly an equal number of cases would be subjects in whom lithotrity might be attempted, because the important operation of lithotomy might be performed in case of failure by the former. Again, lithotrity is preferable in the female subject, and in most of those cases in which the stone is small, and even when hard. But lithotomy is preferable when the bladder contains several calculi, and especially when hard: and when the calculus is large, lithotrity is seldom advisable. In all cases too of irrita-

bility of the urethra and bladder, which could not be subdued previous to the operation, lithotomy is decidedly to be preferred, for although the degree of pain and irritation may be more severe for the time in lithotomy, the length of time and number of sittings required in lithotrity, renders it impossible with safety that the patient should undergo them. Lastly, when lithotrity is recommended, the method by pressure is in a great majority of cases preferable to that of percussion. (47.)

Perhaps in no branch of surgery have more improvements taken place then in the treatment of strictures of the urethra. The works of Arnott, Cooper, Wade, and Arntzenius, which are so ably reviewed in the Brit. and For. Med. Review, bears testimony to the correctness of this observation. Hunter believed that stricture was never produced by gonorrhœa; and Home and Abernethy believed that it was generally brought on by the use of injections during the inflammatory stage: we cannot however but agree with the reviewer of these opinions, that "we are much more likely to expose our patient to the chance of stricture by totally omitting the use of injections in gonorrhœa, then by their judicious employ. The quicker a gonorrhœa is cured the less likely are we to have stricture follow it. Gonorrhœa is a disease whose ill consequences are in a direct ratio with the period of its continuance." When stricture has once taken place, it must be treated either by simple dilatation, dilatation by fluid pressure, or by the bougie armed with the potassa fusa, or nitrate of silver. The bougies used by Arntzenius are very peculiar: they are made of strips of parchment rolled up so tightly that the layers adhere pretty firmly to each other, and having at one end a knob or drop of glue made of boiled parchment. Dr. Arnott uses his fluid dilator with great efficacy. It was constructed with the view of being pressed into the strictured portion and then dilated, with the same object which was had in view when the old tents made of sponge, and bougies made of catgut, leather, &c., were manufactured. This dilator of Dr. Arnott's "should be of little bulk and of easy introduction, and should be made capable of assuming and retaining any shape and magnitude when in the urethra; or should also be capable of exerting a distending force to any degree, and always under control." It consists of "a tube of oiled silk, lined with the thin gut of some small animal to make it air tight, and attached to the

extremity of a small canula, by which it is distended with air or water from a bag or syringe at the outer end, with a stop cock or valve to keep the air or water in when received." For a more particular description of the steps of the operation, we refer the reader to page 139. In hard fibro-cartilaginous strictures impervious to instruments without employing injurious pressure, Mr. Wade revives the practice of Mr. Whateley, viz. the use of bougies armed with potassa fusa, which in his opinion acts beneficially upon strictures, "first, by its dissolvent powers; secondly, by promoting absorption, and stimulating the congested vessels to contraction; thirdly, by relieving irritability and inflammation." He prefers the potassa fusa to the nitrate of silver, as the former does not like the latter cause a slough, and hence the painful sensation produced by the urine passing over an ulcerated surface is avoided. At page 141 will be found minute directions for using the armed bougie.

When the stricture is absolutely impervious, it is not now considered advisable to use the forcible catheterism as practised by Dessault, nor to depend upon the forcible injections of Amussat, but to have recourse to either puncture of the bladder above the pubes, or cutting into the urethra behind the stricture. The first is certainly the easiest operation, and much safer than has been generally supposed; "the puncture through the rectum is preferable to it only in the few cases in which the bladder lies very deep and far back, and the puncture through the perineum should be adopted only when effusion of urine has already taken place. The last mode of operation, by cutting into the urethra behind the stricture is peculiarly adapted to cases in which the retention depends on obstruction by foreign bodies in the canal, or in which the urethra is manifestly very much dilated behind the stricture," but at other times the difficulty of finding the urethra is a great objection. In the treatment of stricture, Mr. Cooper first uses a silver catheter or bougie, to ascertain the seat of the affection, which should be presssed against the constricted portion for a few minutes, which will overcome the difficulty if muscular spasm be the cause of it. If this does not overcome the resistance in three or four minutes, it is evidently owing to the density of an adventitious deposition. In this case more force may be used, but if by moderate force it be not overcome, the

attempt must be relinquished for the present, and leeches to the perineum, and purgatives should be recommended. In many cases, by maintaining an equable degree of force on the surface of the stricture, inflammation and softening down of the newly formed substance is produced; suppuration is set up, and the stricture gives way; and it is now more particularly that the surgeon should exercise the greatest caution to avoid making a false passage, which he is certain to do if he continues to press upon the sides of the urethra instead of the stricture itself. (48.)

Few cases come under our notice which are more dangerous than the contusion of a hernia, which may be so severe as to cause the rupture of the bowel, or such a degree of sloughing as may end in the escape of the fæces into the peritoneal cavity. What are we to do when the blow or injury has been so severe that these results are apprehended, and if the violence of the symptoms be such as to warrant such a conclusion? The most judicious practice, according to Mr. Key, is to open the sac, and if fæces are present to liberate them, and if not, to wait in order to see if the bowel should slough. In either case, the opening of the sac will allow a free exit to any fæces which are, or which may be present. In one case the patient experienced no relief for three days from the opening of the sac, when a copious discharge of fæces took place and completely relieved him. In another case the blow was so severe, and followed by such severe symptoms, that the bowel was supposed to be ruptured. On opening the sac, however, no fæces escaped for four days; at the end of which time, the fæces appeared and escaped freely. On the 7th day the fæces escaped by the rectum, although they continued to pass through the wound for five or six weeks, when ultimately the part healed. These facts will recall to the minds of most practical men, cases of such contusion, which have been left to themselves and have proved fatal by extravasation of the fæces into the cavity of the peritoneum, when an opening into the sac would have prevented such an occurrence; for, although such an opening ought not to be undertaken except from the strongest suspicions that rupture or sloughing has been caused, yet when we remember how often the sac is opened in cases of supposed strangulated hernia, without any danger resulting, we need not risk the life of a patient by an unnecessary delay in such a procedure. (49.)

The operation of M. Callisen, of Copenhagen, to produce an artificial anus in the lumbar region, over that portion of the intestine, not covered by the peritoneum, has recently been revived by M. Amussat with great success. In all the old operations for this purpose in the iliac region, by MM. Litre and Pillore, the peritoneum was wounded, which seems to have been the chief cause of death in numerous cases. In his operation in the lumbar region, Callisen "proposed to make a vertical incision extending from the edge of the false ribs parallel to the anterior border of the quadratus lumborum muscle. He thus hoped to reach the colon between the layers of its short and imperfect mesentery." This operation, however, was attended with some difficulties, till modified by Amussat, who "has shown that the failure of the operation on the dead subject was owing to the intestine being empty, and that in such cases as require the formation of an artificial anus, the colon is greatly distended; in which condition the layers of the peritoneum, forming its imperfect mesentery, are so far separated as to allow the intestine being reached without opening the peritoneum." Amussat has, moreover, adopted the transverse instead of the vertical incision. This important operation has not only been performed on the adult, but also in an infant of forty-eight hours old. An interesting case, in which it was performed on the adult, by Mr. Teale, of Leeds, will be found in article 50, to which we beg to refer the reader for a more detailed account. (50.)

Various instruments have been invented for the evacuation of fluid from the chest. Mr. Snow, from his anxiety to avoid making a communication between the cavity of the chest and external air, makes use of an instrument which draws off any liquid, and at the same time prevents the transmission of air into the chest. "It consists of trocar and canula, with a stop cock in it; the trocar to pass through the open valve of the stop cock. A portion of the trocar must be made perfectly cylindrical, and to fit accurately the whole length of the canula. In withdrawing the trocar from the canula after their joint introduction, it must be brought so far as to be clear of the stop cock, which point is indicated by a mark on the trocar, and then the stop cock must be turned before the complete removal of the trocar. The portion of elastic tube must now be screwed to the canula; and to this tube must be screwed a double

action syringe, with two distinct valves, like a stomach pump. The valve of the stop cock can now be re-opened, and by working the pump, the contents of the pleura, whether gaseous or fluid, will be withdrawn."

This is certainly an ingenious instrument; but we must confess that we do not see that it is necessary to employ all this care to avoid the introduction of air into the thorax, when we know that the lung will frequently expand with the chest, although air be within its cavity, except it be bound down by adhesions. And even if air be introduced, it will frequently be absorbed in a very short time.

The grooved needle is also used by some practitioners to evacuate any fluid in the chest: Dr. Prichard, of Bristol, uses a needle with a larger groove than in the common instrument, and in this way is able to evacuate any fluid with perfect ease and safety; and with this advantage, that the pain attending the operation is so very trifling, that the patient will occasionally call for a repetition of it, after having once experienced the relief which follows its use. He has likewise used it successfully in ascites, and strongly recommends that both in this disease and in hydro-thorax, it should be used much earlier than the trocar is generally recommended, being "persuaded that the practice of deferring paracentesis in ascites, till all other means have been long tried, is one principal cause of the frequent return of the effusion." Dr. Babington has invented another very ingenious instrument for these cases, which in some instances may be even superior to the grooved needle, through which fluid will at times flow with difficulty. It consists of a very small trocar and canula, which, together, are not thicker than an ordinary grooved needle, and a probe which would pass through the canula. It is very possible for the grooved needle to mislead the practitioner in his diagnosis in some cases, and especially in empyema, which is seldom a true effusion of pus, but only a puriform-looking liquid; "and the grooved needle often separates the serum from the small secretions of albumen, and causes empyema to be thought a simple serous effusion." Both these instruments, however, may easily be used, and with perfect safety to the patient. In one case in which it was used by Dr. Bird, no fluid escaped, and on passing the probe through the canula the lung could be felt distinctly, without any ill effects to the patient. (51.)

We think that in most fistulous communications between the bladder and vagina, and rectum and vagina, the actual cautery has failed so frequently, not so much from the improper way in which it is applied, but from the *short intervals* which have been allowed to elapse between one application and another: and we may extend the same observation to cauterisations of the mucous membrane of the vagina in cases of prolapsus uteri. In cases of severe burns, nature requires a long period to complete the full extent of cicatrisation and contraction of which the parts are capable, and were we to be repeatedly interrupting the process of contraction by fresh cauterisations we should only retard the operation, and perhaps eventually frustrate it in some degree. This is especially applicable to cases of vesico-vaginal fistulæ, in which it has been recently suggested by Mr. Liston, and acted upon by Dr. Payan, that the cauterisations should be practised at *very long intervals,* so as to allow nature to complete the full extent of contraction of which the parts are capable, before having recourse to a fresh application of the cautery. It is recommended that four or six months should intervene between each operation. We should like to see the same success attending a similar action of the mucous membrane of the vagina for prolapsions of the womb. (52.)

In cases of gangrenous inflammation, it is well to remember the excellent effects which Dr. Davidson, of Glasgow, has found to result from a saturated solution of nitrate of silver in nitrous acid. He applies the solution to the surface of the part daily, and in the interim applies an emollient poultice. Nitrous acid is mentioned by several writers as valuable in checking gangrenous ulceration, but not, as far as we remember, in combination with nitrate of silver. The addition of this latter substance renders the liquor more caustic, tends to diminish inflammatory action, and leaves an ulcer having more healthy granulations. Dr. Davidson also makes some excellent remarks on the use of ioduret of sulphur in porrigo, lepra, and psoriasis, to which we would beg to direct the attention of the profession. (53.)

A very interesting report is published of the amputations performed in University College Hospital, in which the flap amputation is recommended, as being not only more quickly performed, and with much less suffering to the patient, but as being attended altogether with better results, both as regards

the form of the stump and the rapidity of its cure. There may be much truth in this observation; and yet, when we recollect that the circular operation has also its advantages, that the time occupied in its performance cannot be much longer, and that when a great number of cases are calculated, the success of the circular is at least equal to that of the flap amputation, we do not think that the former ought to be put on one side. Out of 115 cases of amputation recorded by Mr. Alcock, 90 of which were circular and 25 flap amputations, the proportion of secondary hæmorrhages was somewhat greater in the former than in the latter, and with respect to necrosis of the sawn bone, its liability was about equal in both kinds of amputation. But the mortality which followed these amputations, was rather greater in the flap than in the circular amputation. A very important improvement is now frequently adopted, in pressing on the artery of a limb during amputation: instead of applying the tourniquet, an assistant commands the artery with his fingers. By this means very little blood is lost during the operation; for not only is the main artery completely secured, but the return of blood by the veins is not interfered with, as it is by the circular pressure of the tourniquet. Another advantage in this process is, that the retraction of the flaps is not interfered with when no tourniquet is used, so that the bone can be sawn through considerably above the point at which the first puncture in the skin was made. We think Mr. Liston's mode of dressing the stump very judicious, and far preferable to the immediate and hasty approximation of the flaps, which is so frequently practised. An interval of four or seven hours is frequently allowed to elapse after the amputation, before the surfaces are brought into juxta-position; cold water is, during this time, frequently applied to the stump, and the coagula even gently washed from the surface, so that the water may be applied more immediately to the vessels: in the course of a few hours the divided surfaces become glazed over, the wet lint and small remaining coagula are removed, and the dressing of the stump is then proceeded with. The flaps are now brought accurately together, and retained by suture and isinglass plaster. (54.)

Mr. Hugh Carmichael suggests a very simple, and yet we believe, a good method, of obtaining as much blood from the temporal artery, and other small arteries, as we desire. We

know that all divided arteries have a strong disposition to contract, and that the divided extremities separate and retract within the sheath, while the orifices ultimately close altogether; at the same time, the blood clots both in the vessel itself as far as the next branch, and also in the sheath, so that a complete stoppage is put to the flow of blood. The artery should now be *fillipped* in different parts with the finger, and at the same time pressed along its course with the back of the nail, so as to squeeze out any clot which may be lodging; the jet of blood will be again renewed, and will again diminish as at first; the same course must be again adopted, and repeated so long as it may be required, In opening the artery it is necessary to divide it completely across. (56.)

When it is recommended to apply a moxa to any part of the body, Dr. Osborne, of Dublin, has found quick lime to answer the purpose admirably. The quick lime is to be placed on the skin, inside a *porte moxa,* or a strip of card bent together and tied so as to form a circle; some water is then dropped on and mixed with it. "In about two minutes the mixture swells and becomes dry, and at the same time a high degree of heat is produced, which according to some experiments may amount to 500° Far." This is certainly a very convenient and cheap mode of applying the moxa, and may be useful in making issues of any depth. Dr. Osborne thinks "that the heat produces a contraction and change in the action of the vessels of parts over which it is applied, with great excitement of the absorbents, enabling them to return to a state of health after the failure of all other means," as is well known and acted upon by veterinary surgeons when they use the actual cautery. (60.)

It has long been known that both the carotid arteries and the vertebrals may be tied with safety, provided sufficient time be allowed between each operation to allow the anastomosing circulation to be completed; but we believe it has only been lately confirmed by a report of the French Academy that both the carotids may be tied at the same time without immediate danger to the brain—and, moreover, that the danger is not so much in the brain itself as in the lungs, the vertebral arteries being sufficient to supply the brain. The great art in the management of a patient whose carotids have been tied, seems to be in bleeding him freely, if his strength permit, in order to re-

lieve the lungs of that dangerous state of congestion which would produce fatal apoplexy of those organs. Even in the horse, the vertebrals have been found quite sufficient to keep up the cerebral circulation, although in these animals these arteries are very small. (61.)

In a former volume it will be remembered by many that we mentioned an interesting case of Mr. Maunder's, in which that gentleman relieved a case of strangulated hernia by introducing the tube of the stomach pump to a considerable distance up the bowel, so as to give vent to flatus, which was soon followed by a reduction of the strangulation. Mr. A. S. Lawrence, of Clifton, relates an interesting case of strangulated hernia, in which he effected the reduction not by the tube of the stomach pump, but by injecting four pints of tepid water gruel, followed in an hour by another pint, which had to be injected with some force owing to some resistance: on applying the taxis afterwards, the tumour was easily reduced. (63.)

M. Velpeau gives a good epitome of the treatment of varicose veins by different surgeons. This subject has been a good deal discussed of late, and a great variety of means have been adopted to remove the evil, such as acupuncture as practised by Fricke and Davat, local pressure by Delpech and Sanson, ligature by M. Velpeau, and the obliteration of the vein by caustic by Bonnet, and others. Velpeau, who is certainly one of the most eminent and practical surgeons in Paris, places the greatest confidence in the ligature applied as follows: The patient must be placed in such a position as will render the veins tumid and prominent. "The trunk of the vein is now raised up with the fingers' end, and a pin is passed below the ends of the nails and underneath the vein. This must be done to every dilated vein; eight, ten, twelve, or fifteen pins may be required from the foot up to the knee, but generally only about four are necessary." Each pin is then fixed by twisting a thread circularly round it and drawing it tight: to fix it as in hare-lip does not exert sufficient pressure. The pins and ligatures are not removed before the sixth or twelfth day. It is very questionable, notwithstanding the high authority of Velpeau, whether this is the best means of obliterating the vein, which is the great object to be attained: and although he states his practice to be very successful, we know that the reverse is frequently the case, and that dangerous and even fatal conse-

quences sometimes ensue. Another mode of obliterating the vein, not referred to in this place by Velpeau, is, by applying caustic potass to different parts of the dilated vein at intervals of two or three inches. Two applications of the caustic are recommended by M. Bonnet, the first to destroy the skin and cellular tissue over the vein, and the second to obliterate the vein itself; as it has frequently happened that a single application does not actually prevent the current of blood in the vessel, but only destroys the external parts. The second application of the caustic has been rendered unnecessary by M. Laugier's practice of laying bare the vein before applying the potass, and then applying it to the vessel itself. Another excellent suggestion in the treatment of these cases, is that made by Mr. Teale, of Leeds, viz. to apply the caustic not more than two or three inches above the ulcer. This practice has been adopted from knowing that very little good effect is produced beyond the point where considerable anastomotic branches exist, and that the obliteration of a vein by caustic extends only about three or four inches beyond the application, so that it is of little use obliterating a vein for the cure of a varicose ulcer at any point where a large anastomosing branch is given off between that point and the ulcer.

This practice, however, like all the rest, has been attended with occasional inconvenience, such as hæmorrhage, and especially the indolent character of the artificial sore. This is certainly a very serious objection to this mode of treatment, as it occasionally produces a sore as obstinate to cure as the original one. Mr. Joseph Teale has suggested the "immoveable fracture apparatus" to remedy some of these evils; and we believe that the equable and continued pressure arising from this treatment has been of the greatest service. (65.)

M. Velpeau treats varicocele much in the same way as varix, viz., by passing a needle or pin under the mass of varicose veins, and twisting the thread *circularly* round them; a second needle is passed within about an inch of the first one, taking care not to insert the needles too low or two high up, on account of the difficulty of separating the veins of the chord, and not too near each other for fear of causing the two sores to join, thus forming one large one. When the eschars are detached, the needles are withdrawn from the tenth to the twentieth day. (66.)

The usual way to reduce a dislocation has hitherto been to make steady, gradual, and long continued extension on the limb in a certain direction, but instead of this gradual extension, M. Colombot first places all the muscles surrounding the joint in an intermediate state between flexion and extension, and then takes them by surprise, by suddenly rotating the limb, which almost invariably accomplishes the reduction. Professor Williams, of Dublin, relates two interesting cases in which this plan was tried with success; and this leads us to repeat the observation, that the position of a limb in the reduction of a dislocation ought to form a more important point of the treatment than is generally the case. Position, indeed, is never forgotten by the experienced surgeon, but he often depends more upon his power over the muscles by extension and counter-extension, than he need do, if he were to adopt the principle of treatment laid down by Colombot. His principle is to *obviate* muscular power, instead of *overcoming* it. (68.)

We see an interesting suggestion made by Mr. Rogers, of Brighton, respecting the formation of catheters with globular tops. He merely suggests that such an instrument would be useful, judging from the success which attended the bougies used by Sir Charles Bell, which were of a similar form. Such catheters have now been in use for at least ten years, by one of the most eminent of our provincial surgeons, Mr. Smith, Surgeon to the Leeds Infirmary, who finds them in many cases much easier to be introduced into the bladder than the common catheter. The common catheter, as Mr. Rogers intimates, involves the whole passage, whilst the spherical topped one, having but a limited surface of resistance, glides much more easily into the bladder. (69.)

Mr. Bulley recommends, that in cases of iritis, injections of belladonna should be made use of. We have ourselves long been of opinion, with many other practitioners, that belladonna has an excellent effect in cases of this description: at the same time, it would not induce us to neglect the other and more established methods of practice. Mr. Bulley uses twenty grains of belladonna to a pint of water, for a lotion, and adds five grains of sulphate of copper occasionally. He first throws the stream on the closed lids for a few times, and when the patient has been a little accustomed to the shock, he injects the lotion upon the eye itself. (77.)

It is well to bear in mind that the French surgeons affirm, that in cauterising the neck of the womb, it is better to use the deuto-nitrate of mercury in all those cases where congestion of the womb is suspected, as the nitrate of silver has been found to be frequently followed by hæmorrhage. We should doubt the fact, however, that the nitrate of silver was the cause of the hæmorrhage any more than would the deuto-nitrate of mercury; and suspect that the same thing would have occurred from any kind of cauterisation, whether by the nitrate of silver or the deuto-nitrate of mercury. (83.)

M. Jobert, a respectable French surgeon, has found in the treatment of many cases of stricture, that alum has answered his purpose as well as more powerful applications. He places the end of his bougie for a moment in a candle, by which it is so far softened, that on immersing it in pulverised alum, this adheres to the entire heated surface; the point is then rounded off between the fingers, so as to communicate to it a suitable shape. It is then passed into the stricture, and left there for twenty minutes or an hour. Not unfrequently, on the following day, a much larger instrument can be passed. (85.)

There can be no doubt that M. Ricord's method of testing cases of syphilis by inoculation, is a most valuable means of diagnosis, and ought to be almost invariably adopted, not only on account of the great importance to the patient that his case should be accurately diagnosed, but also from the comparative ease with which the experiment is made. The point inoculated should be covered with sticking plaster, and not disturbed for three days; at the end of which time, the punctured point will be either almost imperceptible, or there will be seen the appearance of a small flat vesicle, containing lymph or pus, surrounded by an inflammatory zone. Occasionally a pustule does not form till the fourth or fifth day. When the inoculation has taken effect, we may be certain the disease is genuine syphilis, and may have recourse to mercury, &c., with confidence, and without loss of time. In order to get rid of the artificial sore, we must freely apply the nitrate of silver, so that the texture may be destroyed to the depth of half a line, which will almost certainly destroy it, and cause the sore to heal. There are, however, some objections to this course. In the first place, it is not certain that the sore is *not* syphilitic although the inoculation takes no effect, because the secretion may have been accidentally

removed from the surface of the sore before the lancet was made use of for the purpose of inoculation; or the character of the sore may have been altered by escharotics, or by inflammation and sloughing, or the secretion may be changed through time; therefore it is always necessary, before arming the lancet, that the suspected sore should not have been wiped or dressed with any chemical application for two or three hours previously. (86.)

A curious, but a very likely way of curing ante-version of the womb, is related by Dr. Godefroy. The woman was placed on the side of the bed, with her head and hands on the floor, and with only the anterior part of the thighs and legs resting on the bed. In this position the intestines were drawn towards the diaphragm, and the pelvis is completely emptied, thus giving the womb free liberty to resume its natural position, being of course assisted by gravitation. In this position, likewise, the usual manipulations to restore the organ to its proper position might be resorted to more efficaciously. (90.)

Dr. Campbell brings before the profession a new obstetrical instrument, which he names "the *Kepalepsalis*", which he states to be valuable in extracting the fœtus in cases of contracted pelvis, even when the distance from the promontory of the sacrum to the pubes is only one inch and an eighth. We think this instrument may have some advantages over the *osteotomist* of the late Dr. Davis, but cannot speak of either of these instruments from personal experience. (91.)

A rather unusual way of checking hæmorrhage after delivery, is that lately practised by Dr. Hecking. It seems, that after a delivery of twins, the womb would not contract; and, after using a variety of methods to induce this contraction, Dr. Hecking introduced a sponge, previously dipped in cold water, into the womb, and applied it to the internal surface of that organ; as often as it became covered with blood it was removed, dipped again in cold water, and again applied in the same way. This completely succeeded. We see, however, no mention made of ergot of rye, and we must say that this was an important omission; for Dr. Hecking would have found, that this valuable drug would probably have saved him the trouble of applying cold water in the way which he practised. If he had immediately given half a drachm of fresh powdered secale, and repeated it in a quarter or half an hour, or an hour, according to circumstances, he would have seen its excellent effects; and

if he had anticipated hæmorrhage after the labour from the previous inactivity of the womb, he might have given the secale before the labour with still more advantage. The practitioner will frequently have patients in whom he will always have to fear severe hæmorrhage after labour, judging from the disposition of the womb in previous labours: in such cases he should always give a gentle dose of ergot before the child is born, which will save him much trouble and anxiety afterwards. (93.)

Before closing this retrospective summary of the most striking improvements and suggestions which have been published within the last six months, we would advert to the operation of *Lithectasy*, which is published in Dr. Willis's late work on Stone in the Bladder. It consists in cutting down upon the perineum behind the bulb, and then gradually stretching or dilating the orifice into the bladder, by means of the fluid dilator of Dr. Arnott. It seems to convert the operation in the male into that of the female, from whom, we know that calculi of very large size can be extracted by simple and gradual dilatation: and although this kind of operation has not yet been sufficiently corroborated by experience, we are not acquainted with sufficient contra-indications to prevent its more general trial.

It will not be necessary for us to recapitulate more at length. We might go more into detail respecting many improvements and practical suggestions which will be found in the body of this volume: but the foregoing observations have been deemed sufficient; and any further information may be obtained, either in the preceding pages, or in the different reviews which have afforded us so much valuable information.

BIBLIOGRAPHICAL NOTICES.

A Practical Treatise on Auscultation. By M. Barth, M.D., and Henry Roger, M.D. *Translated with Notes by* Patrick Newbigging, M.D., Ed., F.R.C.S., One of the Medical Officers of the New Town Dispensary, &c. &c.

The work on auscultation now translated by Dr. Newbigging is perhaps one of the most practical works which we possess on this interesting subject. We have risen from a careful perusal of its contents with unfeigned pleasure. The science of auscultation is here presented to us "in an isolated form, and unconnected with any minute investigation of pathology." "The existence of phthisis, for example, may be diagnosed according to the principles explained in the present work, while the causes, pathological phenomena, and treatment, will be best ascertained by referring to Sir James Clarke's" and other treatises on the subject.

There is an excellent recapitulation at the end of the work which gives us a most complete bird's-eye view of the whole subject of auscultation. We wish we had space to publish the whole of this recapitulation. The auscultation of the respiratory apparatus is divided into 1st. Respiratory murmur; 2d. Auscultation of the voice; 3d. Auscultation of the cough. The alterations in the respiratory murmur are further arranged into alterations in *intensity*, in *rythm*, in *character*, and such as are caused by *abnormal sounds*. We will place before the reader some excellent remarks from this portion of the work.

"*Loud or puerile respiration.*—Consists in a vesicular murmur more intense than in the natural state, but preserving the soft and gentle character of normal respiration. It indicates less a lesion of the pulmonary organs, where it is heard, than a disease of a more or less distant portion, so that the healthy parts may be said to *compensate* for the inaction of those affected." p. 346.

"If feebleness of the vesicular murmur coincides with exaggerated sonority of the thorax, it is a case of *emphysema*, if with dulness on percussion, *tubercles* or *pleuritic effusion* are present. If feeble respiration, accompanied with dulness on percussion, be limited to the summit of the lung, the existence of tubercles is probable; if it be circumscribed at the base, *pleuritic effusion* has in all likelihood taken place; if it exist on the summit of both lungs, the presence of *tubercles* on both sides is almost certain; if it occur at the base of both lungs, there will be *double pleurisy*, or *double hydrothorax*." 347.

The complete silence of the respiratory murmur, is not often known either in emphysema or tubercles, and it is therefore of great value in indicating, combined with other symptoms, *pleurisy with effusion*. The chief alterations in the *character* of the respiratory murmur are as follow:

"*Harsh Respiration.*—It exhibits various degrees of force, hardness, and dryness, and these alterations may occur during both acts, or more especially during one.

We observe it in *emphysema* of the lung, in *commencing phthisis*, and finally, in all cases, which are characterized by *pulmonary induration*, (melanosis, cancer, &c.) Of all these diseases, *emphysema* and *phthisis* give rise most frequently to harshness of the respiratory murmur. If this harshness be accompanied by dryness, and if these alterations coincide with a vaulted form, and exaggerated sonority of the thorax, they indicate *pulmonary emphysema*. If harsh respiration be associated with the sound of prolonged expiration, and if it be limited to the summit of the chest, along with resonance of the voice, and dulness on percussion, we ought to establish the diagnosis of crude tubercles.

Bronchial or Tubercular respiration, (tubular or bronchial blowing, blowing respiration.)—Bronchial respiration, which is at once remarkable for its increased intensity, and for its higher tone, is very easily imitated, by blowing into the hollow of the hand, or into a paper cylinder, or through the stethoscope; the sound thus produced resembles tubular blowing in proportion to the force and rapidity of blowing.

Bronchial respiration, when but slightly marked, differs little from *harsh* respiration, of which it is but a higher degree. If well developed, it has a particular *tubular* tone, which serves to distinguish it from *cavernous respiration*, which is generally of a peculiar *hollow* character.

Bronchial respiration may shew itself in certain *dilatations* of the bronchiæ, but it indicates generally a *pulmonary induration;* now, of all these alterations, which may increase the density of the lung, *pneumonia* and *tubercles* are incomparably the most common. In pneumonia all the conditions of bronchial blowing are found combined, whereas several are absent in tubercles, so that tubular respiration is an almost pathognomonic sign of *hepatization of the lung:* it exists only as an exception in pleurisy, and it indicates in this case almost always *pleurisy complicated with pneumonia or tubercles.*

Cavernous respiration, (cavernous blowing).—Resembles the sound caused by blowing into a hollow space: we imitate it by breathing forcibly, keeping the mouth wide open, into the cavity formed by both hands. Its favourite seat is the summit of the chest.

It indicates the *pouch-like dilatation* of a pretty voluminous bronchia, or the existence of a *cavern,* properly so called. But contrasting the rare occurrence of *pouch-like bronchial dilatations,* and of pulmonary excavations, following abscess, gangrene, apoplexy of the lung, &c. with the frequent occurrence of tubercles, we may conclude, that nine times out of ten, cavernous respiration indicates a cavern, resulting from the breaking up of tubercles.

Amphoric respiration.—It is a resonant sound, of a metallic tone, which we may easily imitate by blowing into a jug three parts empty, or through the narrow neck of a glass bottle with resonant walls. It coincides frequently with *metallic tinkling.* Well characterized amphoric respiration indicates almost infallibly *pneumothorax* with *pulmonary fistula,* and *pneumo-hydrothorax* if it be accompanied by metallic tinkling. If imperfectly characterized, it may indicate the existence of those diseases, but it may also be the sign of *a large,* and almost always *tuberculous cavern.*" 348-50.

In the auscultation of the voice, the authors are equally happy at explanation.

"*Bronchial voice* is much louder than normal resonance: it is remarkable for its intensity, its extent, its localization, and its permanence. It may be recognised in *dilatation of the bronchiæ,* in *pleurisy,* and, above all, in *induration of the lung.* But, on account of the *rare occurence* of dilatation of the bronchiæ, bronchophony indicates, almost always pulmonary in-

duration; now, of all the alterations, where the density of the lung is increased, *pneumonia* and *tubercles* are incomparably the most common. The conditions of bronchial voice being better fulfilled in pneumonia than in tubercles, it is more distinctly marked in the former disease than in the latter; it exists only as an exception in *pleurisy*, and indicates that a pluritic effusion is complicated with pneumonic or tuberculous induration.

Cavernous voice (pectoriloquy).—Cavernous voice manifests itself, if, in examining a patient in the act of speaking, the vocal vibrations seem to be concentrated in a hollow space, the walls of which reflect to the ear more or less distinctly articulated sounds. It is in general circumscribed at the superior portion of the chest, and coincides either with cavernous râle, or more particularly with cavernous respiration.

Cavernous voice indicates, like cavernous blowing, the existence of a *pouch-like bronchial dilatation*, or of a *tuberculous, purulent, apoplectic, gangrenous or hydatid excavation.* From the rare occurrence of bronchial dilatations and of pulmonary excavations, independently of phthisis, when contrasted with the frequent occurrence of caverns in cases of consumption, we conclude that, nine times out of ten, *cavernous voice* indicates a *tubercular excavation.*" 355-6.

Although these subjects, and all other subjects connected with auscultation, are so ably treated of in other works of this kind, we have seldom seen them more simply and clearly expounded than in the compendious treatise before us.

On the Treatment of Stone in the Bladder, by Medical and Mechanical Means. By R. Willis, M.D., of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c.

It will not be necessary for us to say much respecting lithotomy and lithotrity, which the reader will find very ably treated on by Mr. Lee in the foregoing pages. In the volume before us Dr. Willis gives us some very interesting information on "the removal of the stone through an aperture made into the urethra in perinæo, and slow dilatation of the prostate gland and neck of the bladder," which is named "lithectasy, or cystectasy". The great dilatability of the female, and even of the male urethra, under a gradually distending force being

known, it began to be asked if this could not be taken advantage of in extracting stones from the bladder. Mr. John Douglas seems to have been the first who directed his attention to this subject. "He proposes that an opening should be made into the urethra from the perinæum. Through this opening, says he, the patient himself, or any one about him, might pass an oiled probe and push the stone back." He then asks the question, "Whether it be not possible to dilate the artificial fistula with sponge or gentian tents gradually increased for some time, to such a width that we may easily pass a pair of forceps into the bladder, with which the stone, when small, may be extracted?" and he concludes by saying that, "artificial fistulas in males and the urethra in females, may be dilated so as to extract any stone without cutting the body of the bladder, or lacerating any of the parts;" and in this conclusion Dr. Willis fully agrees, affirming that, "it involves one of the most important of truths bearing upon the successful treatment of stone in the bladder by a surgical operation. In the year 1819, Drs. Neil and James Arnott assisted by Sir Astley Cooper first acted upon the above suggestion of Douglas. M. Guérin, surgeon to the General Hospital of Bordeaux, invented an operation which is founded in some measure upon the same principle, but which is objectionable on account of the incision being continued from the urethra through the sphincter ani into the rectum. Dr. Willis describes the operation which he so strongly recommends, as follows:—

"Let the urethra be opened upon a grooved staff in the mesial line and behind the bulb to the extent of a few lines, as used to be done in the old operation of boutonnière, or as Cheselden did in his last operation, and every objection to the procedure is at once removed. To make such an opening, a lancet, in the absence of an implement with greater fixedness of parts, would perfectly suffice: and the urethra once open, we can dilate to the extent we please if we will but be patient. The vegetable tents of M. Guérin can always be procured, and nicely made would answer indifferently well to effect the needful opening. But an apparatus that is far preferable, that can be controlled to a nicety in its effects, and that is much more powerful than the tent, whilst its operation is still of the best kind, is the fluid pressure dilator of Dr. Arnott. This is an instrument which consists of a cylindrical tube of silk lined

with the thin gut of a small animal to make it water-tight, fixed upon a canula which traverses its axis, and having attached to its outer end a syringe guarded with a stop-cock, by which it may be forcibly distended with water or mucilage. This instrument when empty exceeds but little in size the bulk of the canula or catheter with which it is connected, and is therefore easily introduced along the groove of the staff into the bladder. When there it can be gradually distended to its utmost limits, and being made of so tough a material as silk, it expands evenly and it is not liable to be burst by any degree of force that can be usefully employed. In Dr. Arnott's original case, 30 hours, during which the urine passed regularly guttatim by the canula, and the patient complained of no pain, but merely of a sense of distension, sufficed to accomplish dilatation to the extent necessary for the introduction of the forceps, and the easy extraction of a stone having the dimensions of a walnut. And this without risk for one moment to the patient! The wound in the perinæum is a scratch; in itself and immediately it is hardly so dangerous as the puncture that is made in venesection; ulteriorly it can by no possibility be followed by any evil or unpleasant consequence; the urine never even comes in contact with the raw surface,—the dilator is introduced, and immediately this fluid, so poisonous to open wounds, finds no passage save through the canula; before the dilator is again withdrawn, the fresh surface has become covered with coagulable lymph, through which nothing can penetrate; and the stone being removed, the gap might be closed with a couple of points of twisted suture and the urine made to come away at once by the whole length of the natural passage.

"To me, I confess, that with this operation at command, stone in the bladder has already lost a great portion of its terrors.—There is hardly a case to which it is not applicable, and its application is without danger immediate or prospective. The brief interval of from four-and-twenty to eight-and-forty hours, is all that is necessary to begin and end the operation;—and this with no doubtful prospect, it cannot end otherwise than well. Even if we found a stone of five or six ounces in weight, we should feel neither embarrassment nor alarm; we never should think of extracting such a mass entire, indeed, but we have an aperture of two or if we choose of three inches in diameter, and a canal of little or no greater length, through

which we can introduce an Earle's or any other commodious instrument for breaking up large stones in the bladder, and reduce it to fragments in a twinkling."

It seems now the opinion of most practical surgeons, that the use of the knife in the deep incisions of lithotomy is too much resorted to; and that a free external wound, with a cautious use of the knife internally, is the most eligible method. In short, some of our most eminent operators have always more or less recourse to a certain degree of *stretching*, in their attempts to enter the bladder and extract the stone; all which would seem to corroborate in some measure the foregoing observations of Dr. Willis. We cannot do better in this place, than give an account of the operation of lithotomy, as lately performed by Mr. Fergusson. This able surgeon, after describing the first parts of the operation, so as to enable him to place the left finger against the groove of the staff, proceeds as follows:—

"He had then put the point of the knife into the groove, and pushed it onwards to the bladder, his aim being to enter it about the middle of the membranous portion of the urethra, and to carry it as far as to notch the left lobe of the prostate. As soon as he supposed he had accomplished the latter part of the proceeding he had withdrawn the knife, and endeavoured to place the point of the forefinger of the left hand on the naked groove; but finding that he could not do this readily, he had again introduced the knife, and enlarged the wound in the deep parts, to enable him to accomplish this,—which being done, he then insinuated his finger gradually into the bladder, and having felt the stone and placed it under the point of his finger, he had desired the staff-holder to withdraw the instrument. Next, he had introduced the forceps along the back of the finger, gradually withdrawing the latter as he went deeper with the former, and just as their points passed into the bladder, a gush of urine occurring, he seized that opportunity of opening the bladder, and, by a kind of shake with the right hand, caught hold of the stone. He had not, however, succeeded in catching a good hold (perhaps it was in consequence of the great size of the stone), and the blades had slipped. On a second attempt he had been more successful, and, with the application of a steady and well-directed force, the texture in the track of the wound had gradually given way, so as to give exit to the stone.

From this description it would be observed that he had made

very small internal incisions, and he felt bound to say, that from the second application of the knife, he had only used it further to that extent as to permit him to pass his finger into the bladder, and this not easily, but with a certain amount of force. These internal incisions had given rise to more difference of opinion, more discussion, and more uncertainty than any other part of the operation. Some entertained the view that unless free incisions were made there was neither safety to the patient nor credit to the surgeon; and others again had maintained (the doctrine was as old as Hippocrates), that it was death to cut the membranous part of the neck of the bladder. He conceived that the success of the high operation of lithotomy, in the hands of Souberbielle and others from the time of Franco to the present day, had sufficiently disproved the adage of the father of medicine, that "wounds in membranous parts are mortal;" yet in his own practice in the lateral operation of lithotomy, it was his invariable rule to avoid the membranous portion of the bladder as much as possible, or, in other terms, he never extended the wound through the whole of the prostate, unless he found it absolutely necessary, Before doing so he preferred notching the prostate gland on the opposite side, to imitate, in some degree, the bilateral operation of Dupuytren; or, if this did not answer, he would notch the gland at any convenient part, or wherever it seemed most tight. Either of these proceedings however, were but rarely required, and he had repeatedly removed calculi as large as the one he had lately extracted, without using the knife in the neck of the bladder a second time. He felt satisfied, that the orifice might in general be expanded, by a proper application of force, as to admit the escape of a very large stone; and to the question whether this expansion was the result of dilatation or laceration he could scarcely give a decided answer. He had no objection to allow the advocates for free incisions that laceration, and not dilatation, was the result of the procedure; but he would not, at the same time, admit that the operation was a bit more dangerous, less rapidly or less efficiently performed, than when a large gap was made. He had himself extracted a stone nearly eight inches in circumference, through a wound which originally had not been larger than to admit the forefinger of his left hand, yet the whole track had closed on the fourth day; and from this case and many others, successful as well as the reverse, he was not of opinion that the fatal result was very frequently to

be attributed to this kind of violence: but, though he was not prepared to say that the free wound through the prostate into the membrane of the bladder was the cause of death in all instances where it was practised, he gave a decided preference to that plan whereby a small margin of the prostate, even after considerable expansion, should still remain entire; for he thought that there was less chance of *great* laceration in this way, and, moreover, that there was less chance of the urine becoming infiltrated, or of it causing injurious inflammation in passing over the hard and somewhat smooth margin of the prostate than over the lacerated edge of the bladder. But all these matters were difficulties, which the best in the profession had endeavoured to explain, and each side of the dispute had most honourable and worthy partisans. His pupils would have no difficulty in perceiving which side he leant to: a free external wound varying in length from two inches to four, in proportion to the depth of the perineum, with a cautious use of the knife internally, he thought the most eligible practice; but whatever might be the size of the wound, the succeeding beauty of the operation (if he might use such a term) depended greatly on the use of the forceps, both in catching the stone and in extracting it."—*Lancet, May* 21, 1842, *p.* 260.

An Essay on the Chemical, Botanical, Physical, and Parturient Properties of the Secale Cornutum. By T. H. Wardleworth, Surgeon.

Throughout this little work we can see that the author is a practical and intelligent man, but we should beg distinctly to disagree with him in one of the most important assertions which he makes; viz., "Out of 357 cases of head presentations in which I have administered the ergot of rye, in every stage of parturition, in all states of dilatation of the os uteri, and in many instances of the first child, I never had the slightest reason to regret its exhibition, or believed that it had acted injuriously on the mother or the child, except in two cases." Now we do say, that if the above opinion go forth to the world, and especially to young practitioners, and be acted upon, it will be the cause of considerable mischief. It is almost the only opinion on which we disagree with the author, but it is important for every one to know, that *whenever* the ergot is given too early in labour, and whenever any obstruction exists to the

ready passage of the child downwards, such as a narrow pelvis, a rigid or contracted os uteri, or rigid external parts, the life of the child will be endangered even by a moderate dose of ergot. With this exception, we think this little volume a very practical and useful one.

The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias, comprising Standard and Approved Formulæ for more than 2000 *Officinal and Extemporaneous Compounds, employed in Medical Practice, arranged in Alphabetical Order.* By Henry Beasley.

The title of this book sufficiently acquaints us with the general character of its contents. It is a complete *multum in parvo,* and ought to be in the hands of every practitioner,—but it is still more adapted to the wants of the compounding druggist than to the medical practitioner. We think the great fault of these formularies is in the different mixtures, pills, &c., being arranged alphabetically. Instead of arranging the decoctions, infusions, syrups, &c., in this order, we should find a work more useful, if the most important articles in the Materia Medica were arranged in this alphabetical order, and all the most excellent formulæ in which each article formed a conspicuous part were appended. For example, if the practitioner is in attendance on a case of bronchitis, he will know at once the general principles of treatment, by expectorants, &c., but may be wishful to give one particular medicine in which ipecacuanha, or tartar emetic, or lobelia inflata, may form a principal ingredient, in which case he would refer to the above drugs, and would find appended to each all the most approved formulæ in which they were combined. The work before us does not enable us to do this: and even Dr. Ryan's "Formulary of Hospitals," which is a most excellent little treatise, is deficient in this respect. In this latter work we find the different prescriptions arranged under the heads, Astringents, Tonics, Stimulants, Diuretics, &c., but we still think that the arrangement which we have suggested would be infinitely more useful to the practitioner.

Contributions to Aural Surgery. By James Yearsley, M.R.C.S., Surgeon to the Institution for Curing Diseases of the Ear.

We certainly think that aural surgery is neglected in this country. The diseases of the ear have so long been considered

almost incurable that the practitioner does not trouble his head about them—they are neglected at the commencement, and do, indeed, too often become perfectly irremediable. After an attentive perusal of Mr. Yearsley's contributions, and especially the last, No. IV., we can see nothing in them but what is sound and practical, and as far from empiricism as possible, although we are aware that many people have attempted to fix this stigma upon him. His observations on enlarged tonsils, which are so often combined with other diseased states of the mucous surfaces, to produce deafness, are well worthy of perusal. He says,

"The enlargement which is most apt to produce deafness frequently does not project sufficiently from between the pillars of the fauces to be perceived on looking into the throat; it is hidden conjointly by the anterior pillar and soft palate. Thus it is, as I have verified in many instances, that the surgeon has been deceived, for the condition of the parts is rarely examined *with the finger*, which should invariably be done. Were he to do so, he would not unfrequently detect the enlarged tonsil stealing upwards, and encroaching on the mouths of the eustachian passages.

The enlargement which is productive of thickened speech, on the contrary, strikes the eye immediately the mouth is opened, and extends downwards in a contrary direction to that which is calculated to produce deafness. If the upper margin of the morbid growth be defined to the eye, thick speech only is the effect; but if the growth ascend, so as to interfere with the movements of the uvula and soft palate, then we have associated with the thickened speech, *nasal speech.*

The enlarged tonsil which interferes with swallowing, is that which projects into the pharynx, almost or quite meeting its fellow, and each is generally attached to its site by a narrow base. I have removed several of such enlargements from persons who complained that they had never been able to swallow their food until they had two or three times returned it to their mouth to be re-masticated. Such persons are twice as long at their meals as those about them.

In those cases where the enlarged glands have an extended base reaching from the vicinity of the eustachian tubes to the bottom of the pharynx, and such cases I have frequently seen, we may look for defective speech, hearing, swallowing, and breathing, altogether associated, more particularly if the uvula enters into the diseased condition of the parts."

BOOKS RECEIVED.

1. Elements of Materia Medica and Pharmacy. By O'Bryan Bellingham, M.D. Lecturer on Materia Medica at the Richmond Hospital School of Medicine, one of the Medical Officers of St. Vincent's Hospital, &c. Edited by Arthur Mitchell, M.D. Licentiate of the Apothecaries' Hall, Dublin; Lecturer on Botany, at the Richmond Hospital School of Medicine. *Part* 1.
2. A Practical Treatise on Auscultation. By M. Barth, M.D. Associate of the Faculty of Paris, formerly First Clinical Assistant at the Hotel Dieu, &c. and Henry Roger, M.D. Translated with Notes. By Patrick Newbigging, M.D. Edin., F.R.C.S. one of the Medical Officers of the New Town Dispensary, &c. &c.
3. On the Treatment of Stone in the Bladder by Medical and Mechanical Means. By R. Willis, M.D., of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c.
4. Practical Observations on the Prevention, Causes, and Treatment of Curvatures of the Spine, with an Etching and Description of an Apparatus for Correction of the Deformity; and Engravings Illustrative of the Cases: to which is added a Chapter on Pulmonary Consumption. By Samuel Hare, Surgeon.
5. Contributions to Aural Surgery. By James Yearsley, M.R.C.S., Surgeon to the Institution for Curing Diseases of the Ear.
6. An Essay on the Chemical, Botanical, Physical, and Parturient, Properties of the Secale Cornutum, with an Engraving. By T. H. Wardleworth, Surgeon.
7. The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias, comprising Standard and Approved Formulæ for more than 2000 Officinal and Extemporaneous Compounds, ememployed in Medical Practice. By Henry Beasley. *Second edition.*
8. An Exposition of the Pathology of Hysteria; elucidated by a reference to the Origin, Diagnosis, Symptomatology, Pathology, and Treatment of Hysterical Amaurosis. By Edward Octavius Hocken, M.D., Member of the Royal College of Surgeons, London.
9. An Inquiry into the Sources and Mode of Action of the Poison of Fever. By Alfred Hudson, M.B. T.C.D., Physician to the Navan Fever Hospital.
10. Observations on the Incipient Stage of Cancerous Affections of the Womb. By W. F. Montgomery, A.M., M.D., Professor of Midwifery to the King and Queen's College of Physicians in Ireland.
11. Observations on the Use of the Vectis, or Single-blade Extractor in Difficult Labours. By James Barrett, M.D., Physician to the Dispensary, and Accoucheur to the Lying-in-Charity, Norwich.
12. Preservation of the Teeth Indispensable to Comfort and Appearance, Health and Longevity. Being a New Edition of Dental Practice. By John Gray, Consulting Dentist, &c., M.R.C.S., &c.

As it is the Editor's intention briefly to notice such Works as may be useful to the profession, it is requested that all Books intended for such insertion may be forwarded to his residence, 25, Park-Square, Leeds, (carriage paid); or to the Publishers, Simpkin, Marshall, & Co., London.

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